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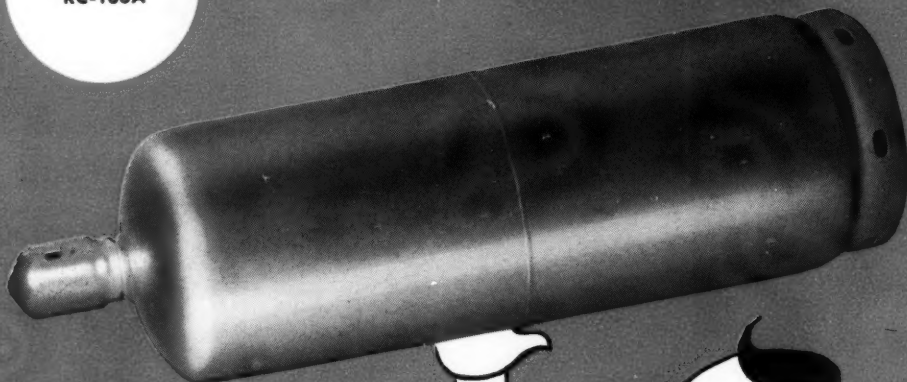
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MARCH 1954

# BUTANE-PROPANE

NBP

News

VOLUME 16 • NUMBER 3

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## Oregon

We would like to have your comments regarding the new ICC regulation where any competent person, who is thoroughly experienced in the care of L. P. gas cylinders, can make visual cylinder inspection to qualify that cylinder for further usage or to classify the cylinder as a reject.

Particularly, we have wondered what liability an organization like ours is going to assume when they take on this type of a program. Do you have any knowledge of any record that might indicate that there would be some added liability?

Also, do you have any thoughts that because this responsibility of inspecting these cylinders is spread out through everybody who so desires to do it that possibly the insurance companies will automatically include this in the liability rates.

R.L.B.

Even as we published the news item to which you referred in your letter, the question of what constituted a "competent person" came to our minds, and we also speculated as to what might develop if each and every cylinder owner considered himself a "competent person" to inspect and pass on the condition of the cylinder.

We question if ICC will go along with anyone passing on the condition of ICC cylinders except personnel experienced

and trained in this type of work, such as members of a nationally recognized testing laboratory, licensed boiler inspectors, or other competent inspectors trained and licensed or certified to perform this type of service.

You will note that ICC regulations require the inspector to fill out a suitable data sheet on which all pertinent information about the cylinder is recorded together with the final disposition of the cylinder.

We regret that we cannot give you a more positive answer at this time, but promise to publish further clarification on this subject as soon as it is available.—Ed.

## New York

I would like to call your attention to an item on Page 31 of the December 1953 issue, under the caption "Indiana". The inquirer had asked for recommendations with respect to the repair of propane cylinders which are found to have pinhole leaks in the welded seam. The first paragraph of the Editor's comment is correct and well expressed. As a matter of fact, the ICC Regulations prohibit the repair of such leaks except by experienced personnel and by processes similar to those under which the container was fabricated. Retest of the container after repair is also required.

It is a hazardous procedure to at-

tempt to repair leaks in the weld by peening. The owner of the cylinder has no way of knowing whether he has satisfactorily corrected the fault or whether he has created an even worse condition which may momentarily not be apparent.

FRANK FETHERSTON,  
Vice president, National LPGA.

Our thanks for calling this error to our attention and to the attention of our readers. Thanks, also, to Paul Tucker of Phillips Petroleum Co. for calling this to our attention. Although peening is done, it certainly is not to be recommended as a safe practice.—Ed.

## Montana

We have a propane-fired steam boiler installation in a grade school building which is not giving satisfactory results. The boiler has an AGA steam rating of 2200-sq.-ft. radiation and is supplied from a 1000-gal. buried field tank. During cold weather last year there were times when the gas pressure was so low that it was difficult to maintain any steam pressure.

This has been variously diagnosed as due to the mixture of butane in the gas, insufficient vaporization services, etc.

Would a small heater near the outlet of the tank to counteract the refrigerating effects of the vaporizing be beneficial?

We would appreciate receiving any information on vaporizers or other methods of correcting this situation.

E.G.O.

A steam boiler rated at 3200 sq. ft. of radiation will have an input demand of approximately 660,000 Btu per hour. This will require around 7 gal. of L. P. gas per hour when the boiler is handling its full load.

The fact that the gas pressure was too low at times to maintain proper heat input to the boiler indicates that there was not enough vaporizing capacity in the storage vessel to maintain an adequate pressure and supply of vapor. Three things may cause this:

1. Storage vessel is too small to provide adequate vaporization rate.
2. The fuel mixture may have a large proportion of butane, which means its boiling point is high.
3. The regulator may not be of adequate size to pass sufficient fuel to the boiler when the storage tank pressure drops off.

The trouble may be due to any one or a combination of two or all three of the above items. The regulator can be checked easily by referring to the manufacturer's charts to see what inlet pressure must be maintained to provide a flow equivalent to 660,000 Btu at the required pressure.

In the cold climate experienced in the vicinity of Billings, an L. P. gas fuel having a relatively high proportion of pro-





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Servicing is a "Breeze" with our Vapor Dome tank ... with all fittings, relief valve, and Visible Float Gauge in the streamlined Vapor Dome at the end of the tank.

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**Filler Hose Easily Attached** ... no "Rough-edged" curb box for your hose to rest on while filling the tank.

**Welded Construction** assures durability ... long service life ... as required by A.O. Smith exacting standards.

**Guarantee in writing** ... attached to every tank when it leaves our plant ... backed by the A.O. Smith Corporation, now in its seventy-ninth year of serving American Industry.

**Regulator and pig-tail** ... installed so that gas leaving the house line valve has direct downward flow all the way into service main.

**Strategically warehoused** ... Direct delivery to your yard ... Complete assortment of advertising material ... Everything to help you sell the Vapor Dome System at a PROFIT!

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pane is desirable because of its lower boiling point.

It requires about 725 Btu to transform a gallon of L. P. gas from liquid into gas. This heat must enter the liquid through the shell of the storage tank from the surrounding atmosphere or ground in the case of an underground tank. Therefore, the rate of vaporization is also dependent upon the quantity of liquid in the tank. If the tank is nearly empty, less vapor can be drawn off without encountering low pressure trouble than if the tank is relatively full.

Without going into details, experience indicates that a 1000-gal. underground tank is not adequate to handle the heating load you list without the use of a vaporizer. The installation of a second storage vessel of the same size and connected in parallel, ahead of the regulators, would handle the load.

Vaporizers suitable for the above service are manufactured by the following companies:

John E. Mitchell Co., 3800 Commerce St., Dallas, Texas.

American Liquid Gas Corp., 1109 S. Santa Fe, Los Angeles 21, Calif.

Consolidated Gas & Equipment Co., Box 6560, Stockyards Station, Denver, Colo.

A small heater at the outlet of the tank would not be satisfactory. The heat must be supplied to the liquid.—Ed.

## Safety Program

The society's analysis of the safety practices of the L. P. gas dealers has determined that the following dealers are definitely using your safety material published in BUTANE-PROPANE News. There are also others who use it to various degrees.

Placer Gas, Auburn, Calif.

Maco Gas, Lodi, Calif.

Bakern Gas, Bakersfield, Calif.

Van Horn Butane, King City, Calif.  
(This dealer not only uses it as material for discussion, but is actually following the program month by month as being mandatory for all their employees.)

This society believes that your material is valuable to our industry and has recommended that it be obtained and followed by dealers who do not have a definite safety program established.

You understand, of course, that my information is developed from preliminary surveys made by the society. A recheck would probably disclose more dealers using the material as a result of my recommendation.

William H. Hulse

Field Survey Representative

The Society for the Advancement of the California LPG Industry Inc.  
Santa Rosa, Calif.

With reference to the Safety Meeting Section in the November 1953 issue of BPN—Subject: "Let's Make

Every Fuel Delivery Safe."

I would like to have 25 copies of this section—one for each of our plants. If you do not have these as a separate item, then send me 25 issues of BPN and charge us accordingly.

J. Vic Hamar

Gas Heat Inc.

Portland, Ore.

Our safety program is built around monthly safety meetings along with special bulletins coming out from the main office on every occurrence which comes to our attention in the industry which might help the fellows in avoiding accidents.

Our regular monthly safety meetings have been pretty much in accord with those which have been written up in BUTANE-PROPANE News over the past few months. Each employee studies over that safety meeting which has been printed in BUTANE-PROPANE News and then affixes his signature after he has thoroughly digested that information which was contained in the article. This is a MUST with each of our employees. Every effort is made to instruct the new man and to keep our old employees aware of safety at all times.

It is my feeling that this safety program has improved the operation of our company and our records show a reduction in total number of accidents even though our business has expanded greatly during this past year.

M. F. Van Horn

Van Horn Butane Service  
King City, Calif.

## Ohio

We have two problems that we would like a little help with. One is, what is being done with the new plastic pipe? We have used this on our own home and it works very well. We use this on the low pressure side. We are wondering if we can feel safe in using it on other installations.

We have an installation that is complete in that we heat the house, cook, heat water and refrigerate with our L. P. gas. There is one trouble and it is the woman of the house likes flowers and not a flower will bloom. Some of the violets will not keep a leaf. They would like to have this looked into and we do not know a thing about plants and how the gas will affect them.

E.R.G.

We do not have any authoritative information at this time regarding the use of plastic pipe or tubing for carrying L. P. gas. We do know that it should not be used

any place within a building since it softens and loses strength at relatively low temperatures, is easily destroyed by fire, and has poor resistance to penetration by hard or sharp objects.

Many gas utilities are using it, but only outside of buildings and underground. Those companies that do use it for service lines either connect it to iron pipe outside buildings, or in cases where the plastic service line is brought through a basement wall to a meter located in the basement, a metal sleeve is set in the wall and the plastic tube passes through the protective tube. Then the plastic tube is connected to iron pipe through a special fitting which in turn is fastened to the inner end of the protective tube. This arrangement prevents any gas that might leak from the plastic tube from following the tubing into the basement.

We suggest you obtain a copy of the National Fire Prevention Association Pamphlet No. 52, entitled "Liquefied Petroleum Gas Piping and Appliance Installation in Buildings." It can be obtained from the NFPA, 60 Batterymarch St., Boston 10, or from the Liquefied Petroleum Gas Association, 11 S. La Salle St., Chicago. Price is 50 cents per copy.

House piping should be installed in accordance with the regulations of local ordinances of the municipalities, counties, or other authority having jurisdiction.

Your problem regarding lack of blooms or flowers is one that has come to our attention before. However, there has never been any cause or reason for this trouble that could be traced directly to the gas. There are hundreds of thousands of homes using L. P. gas wherein flowers are raised and which bloom well during all seasons of the year. There are no products of combustion from gas that should prove harmful. We feel that there may be some disease or other cause of your customer's trouble.—Ed.

## Florida

We were referred to you by the Carnation Milk Co. of Los Angeles. It is our understanding that you have some information on using L. P. gas as a fuel and as a refrigerant on trucks.

We are primarily interested in using it to refrigerate some milk trucks, as there are several companies in Florida and Georgia which can equip trucks whereby they can be operated by using L. P. gas as a fuel.

R.M.P.

Quite a bit of work was done several years ago on the use of L. P. gas as a refrigerant for truck bodies in conjunction with its use as a motor fuel. The work indicated that it could be done successfully. There are, however, patents which cover the methods.

There has been very little work done to develop suitable equipment because of the small demand, until recently, for such equipment, and we do not know of any commercial units on the market at this time.—Ed.





# SURE!

## SURE!

## SURE!

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LP GAS

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MARCH



## Beyond the Mains

OUR L. P. GAS INDUSTRY IS BEING OUTSOLD BY REDDY KILOWATT'S BOYS. Sales statistics show it, and surveys of public opinion show it. Public opinion, now swinging in favor of our competition, can be changed, but that is a slow process. We face a long hard fight. Let's take off our rosy glasses, and look this electrical competition business straight in the eye.

We have a tough competitor. The electrical industry has it over us in age, experience, financial resources, and organization to carry on a coordinated competitive battle.

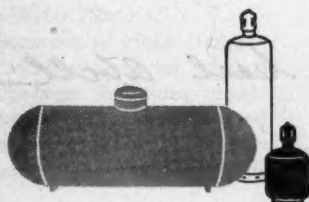
We think of this competition as a great colossus of corporations, plus a sizeable slice of the government. But let us look closer. Competitors are only men, and all organizations are composed of men. Propaganda, in all its forms, is but the extended voice of men. In any competitive battle the entire armies and armament consist of men and their brains. Competition boils down to "men against men". What one group of men can do, another can equal or excel. No one is licked until he quits, and we have no reason to quit.

This competitive battle is, in the final analysis, a fight over the interpretation of facts. Facts can not be altered by men, but they can be obscured and distorted, as they have been in the present struggle. Competitive brains can always bring these facts back into clear focus.

WE KNOW THAT FACTS FAVOR L. P. GAS.

Facts, properly and persistently told, will win this fight. We just have not told enough facts, in enough ways, to enough people.

There are individuals in our industry who are winning skirmishes against electrical competition, right down where competitive fights are won or lost -- in the home of the prospect. There are local and state groups giving effective support to the front-line troops. There is a National Committee working up to the limit of the resources that the industry has given it, trying to supply the materials of war and create the mental climate of victory. We are on our way, but there is still a long way to go. And the final show-down is at the grassroots.



Continued ...





Continued ...



## Beyond the Mains

We have unlimited faith in the courage, ability, energy and resourcefulness of the men who make up the L. P. gas industry. We are sure that within this industry there are enough blood, guts, and "know-how" to win this fight. Fighting courage is the birthright of free men, and we find it everywhere. But in our still new industry, "know-how" is largely in the development stage, and we do not find it all in one place. A thousand men, scattered all over the nation, have each found out their own answers to portions of this electrical competition problem.

Bringing these scattered bits of knowledge and technique together, coordinating them into an effective armament of fighting weapons, and delivering the package to the men on the fighting line, is a logical function of an industry magazine. We believe that the pages of BUTANE-PROPANE News offer the best means in the industry to make each man's "know-how" available to all. This is the reasoning behind the series of articles on "How To Beat Electrical Competition" which opens on page 33 of this issue.

For the sake of the record, let's make the purpose of this series plain. It is primarily to give the foot-soldiers of the industry additional working information, and show them how to use it more effectively. It does not replace or compete with the programs now being carried on or planned by the various associations. It is our means of helping the industry program to be fruitful. How good the program becomes, and how long it will continue, are up to you. It must be based on sharing experience. Will you pool your "one man's experience" to get a hundred back?

WE NOMINATE CHARLES W. H. WEST, service manager of The Crutcher Sales Co., Pyrofax dealer, Louisville, Kentucky, for the honor of being the longest-continuously-employed employee in the liquefied petroleum gas business. He has been with Crutcher Sales Co. since its inception in 1926--going on 28 years. But that is not all--he was already an experienced L. P. gas man, having at that time worked for 8 years with the Blaugas Co. of Louisville, which handled liquefied petroleum gas of another variety. If you have any more promising candidates for the veterans' hall of fame, trot them out.

*Karl Abell*





# The Electrical Industry is Asking for a Battle

# LET'S FIGHT!

**The electrical industry tried to shoot a forward pass in sponsoring Technical Bulletin 1073 of the U. S. Department of Agriculture. By aggressive playing we can intercept that pass, and put it across our own goal. In this article our coaching staff analyzes the play and points out the winning strategy. Let's get going!**

**By Carl Abell**

IT has been stated, with as great accuracy as metaphor permits, that propaganda is the anaesthetic used in the operation of picking pockets.

High on the list of the all-time-great strokes of propaganda is the recent Technical Bulletin No. 1073, of the Bureau of Human Nutrition and Home Economics, Agricultural Research Administration, United States Department of Agriculture, entitled "Comparative Utilization of Energy by Household Electric and Liquefied Petroleum Gas Ranges, Refrigerators, and Water Heaters."

This document is great (for the electrical industry) not for what it says, but because in leaving unsaid the vital conclusions as to cost, it creates an impression that is in most areas exactly the opposite of the

truth. And the "government" says it!

The series of tests reported in Bulletin 1073 was inspired and financed by the National Electrical Manufacturers Association, which organization was understandably interested in presenting the case of the electrical appliances in the most favorable legitimate light. In this passion for legitimacy of results the NEMA was at the last moment kept from straying off the beam by our own Liquefied Petroleum Gas Association, which, noting that the investigation was about to be conducted with worn-out or obsolete gas equipment, generously arranged, in cooperation with the American Gas Association, to see that modern gas appliances were supplied for the comparative tests against the likewise most modern electrical appliances. So, with this assistance, the comparative tests

were conducted by the Bureau of Human Nutrition and Home Economics, under terms and conditions laid down by the financial sponsors, NEMA, and the results were published by the Department of Agriculture, whose documents enjoy an excellent reputation and are very widely read and believed, particularly by that segment of the population which includes the majority of the customers and prospects of the liquefied petroleum gas industry.

Bulletin 1073 follows exactly the lines indicated in the title. In line with modern procedure, the results are summarized in the opening pages, so the reader does not need to wade through a long, and in this case tiresome series of test procedures and reports in order to find out the conclusions indicated by the tests. The findings of Bulletin 1073 are presented in



## The Electrical Industry Is Asking For a Battle

five short paragraphs on page 2.

We have no reason to believe that these findings represent anything but a true picture of the tests as conducted, reported in terms outlined in the preliminary arrangements, and clearly indicated in the title of the bulletin. The fact that a gas water heater must be at least 70% efficient to qualify for AGA approval, while the worst electric water heater was reported to be 49% more efficient than the best gas water heater under the

prescribed test conditions most favorable to the gas water heater, is beside the point. We accept this as one of the miracles of modern scientific propaganda.

The Bureau has neatly side-stepped the important matter of comparative cost of operating the electrical and the gas appliances on the very logical grounds that costs of both sources of heat vary widely in different parts of the country. The reader is supposed to supply that cost

information for himself, from a combination of data contained in the report and the local prices of L. P. gas and electricity. This can be accomplished by a not-too-complicated mathematical procedure, using a fairly simple formula, which the report unfortunately fails to include. Even more unfortunately, the average householder is so out of practice in calculating that he or she would have little inclination to discover the formula and seek the answer. How much simpler it is to merely accept unquestioningly the impression created by the five paragraphs on page 2, that appliances operating on L. P. gas are hopelessly outclassed in efficiency by those which derive their energy from the convenient local power line. Could this result have been foreseen by those who planned the tests and financed the project?

### An Unfair Advantage

Be this as it may, the report gives the people in the electrical industry a great and unfair advantage, as long as they do not have to make explanations. Conversely, the salesman of L. P. gas and appliances can not make his sale to a prospect who has absorbed the impression created by Bulletin 1073 without first explaining away that impression. And now we learn that the electrical industry has prepared a motion picture based on these same tests.

We may anticipate that the electric companies, including the REA co-operatives, will take utmost advantage of the sales opportunities which Technical Bulletin No. 1073 and the related motion picture place at their disposal. And they have plenty of facilities for broadcasting the information. Furthermore, they have direct access to most of the potential customers for the various domestic gas and/or electric services, on a very direct and personal basis—more than 90% of the rural homes are now electrified at least to some extent. The 1950 Census of Agriculture lists 5,382,162 farms in the United States, as of April 1, 1950. Of that number, census figures show that only 640,000 were not then connected with central station electric service. We know that some of these farms do not have occupied dwellings—the number is

### 2 TECHNICAL BULLETIN NO. 1073, U. S. DEPT. OF AGRICULTURE

for the electric ranges studied; energy used by the ovens varied more widely from one range to another. On the other hand, the gas ranges studied showed considerable variation in energy for top cooking, while the ovens differed only slightly in use of energy. Some of the variation in energy use by gas ranges for top cooking was apparently due to differences in the B. t. u. inputs of the burners; those with the higher inputs used less total energy than did burners with lower inputs.

In comparing electric ranges with gas, it was found that for top-of-range cooking the gas ranges (constant-burning gas pilots included) used from 1.60 to 2.34 times as much energy (B. t. u.) as did the electric ranges. Gas range ovens used from 1.89 to 2.48 times as much energy as electric range ovens. For cooking a series of meals, which included both top-of-range and oven cooking in a predetermined ratio, the combined top and oven figures showed that the gas ranges used from 1.82 to 2.33 times as much energy as the electric ranges.

Though comparison of speeds of cooking was not an objective of the study, complete time records were kept for purposes of energy computations. An analysis of the time data shows that general statements concerning relative speeds of cooking with electricity and LP-gas cannot be made because there was no clear-cut superiority of one type of fuel over the other. When the 8 ranges (4 electric and 4 gas) were ranked according to the time for cooking 8 days' meals the 2 types were intermingled; ranges using the same fuel ranked both first and last.

Gas refrigerators studied used considerably more energy under all conditions of test than did electric ones. A comparison of refrigerators of approximately 8-cubic-foot capacity in an ambient of 70°F., showed that the figure for gas energy was from 10 to 18 times as great as that for electric energy. The 9-foot refrigerators in a 110°F. ambient (the highest ambient temperature used) were found to have comparative energy figures 7 to 9 times as great for gas as for electricity.

All refrigerators showed a marked increase in energy use with rising ambient temperature even at higher average cabinet temperatures. The rate of increase was less for the gas than for the electric refrigerators. However, it was impossible in one gas refrigerator to maintain the required cabinet temperature in a 110°F. ambient.

Electric water heaters studied were similar in the amounts of energy used; gas heaters showed a wider variation. The greatest differences between heaters were found at the minimum, or 38-gallon, drawoff. At the higher drawoffs (78 and 112 gallons) differences were less. In comparing electric with gas water heaters it was found that the gas heaters used from 1.85 to 2.22 times as much energy at the 38-gallon drawoff as electric heaters. As amounts of water withdrawal were increased, the rate of energy increase was less for gas heaters than for electrics. At the 78-gallon drawoff, gas heaters used from 1.58 to 1.81 times as much energy as electric ones, and at the 112-gallon drawoff, from 1.49 to 1.74 times as much.



## Here Is How We Can Beat This Competition

not included in the census report—and we know that in the nearly four years since the report was compiled, electrical service has been extended to additional farms.

Now that coverage by electrical installations has been spread to practically every farm, the electrical industry is seeking further penetration in depth by trying to multiply the number of appliances consuming higher units of power in homes that they already serve. The electrical industry must, by the physical nature of its generating and distributing systems, plan its operations and expansions far into the future. The magazine, "Electric Light and Power," (Dec., 1952) has this to say about recent and projected use of power on farms: "In the nation as a whole, statistics on use of electricity for all purposes on the farm record that, in 1950, the nation's farm families used 12 billion kwhrs. Last year they used 16 billion kwhrs. What of the future? One reliable forecast is that the total annual use of electricity by farmers is increasing so rapidly that, by 1970, it will reach some 70 billion kwhrs." This is the target, and it will require hundreds of thousands of ranges and water heaters, besides numerous outdoor farm power applications, to reach the goal. No wonder that there is a concentrated effort by electric utilities all over the country to increase the number of major power consuming appliances in the nation's farm kitchens. No wonder that NEMA is pouring on the power of propaganda.

With the facilities for distributing the "impression" created by the report on utilization of energy now available to the electrical industry, we may be sure that every electrical customer in the United States will be bombarded with the information from a number of sources. The job ahead of our industry in this instance will be to overcome the misimpression created by Bulletin 1073, and supplant it with the truth in terms that the customer can understand. The one approach which we can be sure will be clear and unmistakable is to tell our story in terms of cost. Cost is the final and fundamental argument. If to this we can add—and we can—that the more important

domestic applications of heat, namely cooking, water heating, comfort heating, clothes drying, and in many cases refrigeration, can be done better, cleaner, safer, and more conveniently with gas than with electricity, our sale is made. The job begins with utilization of such public information facilities as our industry is able to command, and it ends with personal selling to individual customers, taken one at a time.

In the high majority of cases, relative cost of the two sources of energy for the amounts consumed will be the most important factor in the decision, so you should be prepared with some fundamental data on costs. It will be useful to have three types of cost data at your disposal, for three different types of use in your sales presentation. First, you should have a "rule of thumb," or quickie calculating factor, as a guide to your thinking and a check on your figures. Second, you need a means of estimating the probable costs of operating the appliance under discussion, on L. P. gas and on electricity, for the development of your sales presentation. Third, you need records of actual monthly bills, from your own neighborhood, tabulated by combinations of appliances, and supported by the actual customers' bills. There is no substitute for the good old "Lydia Pinkham technique" in carrying conviction.

Let's see about this "rule of thumb." The United States Bureau of Standards gave us one back about 1940. They say, "As a rough estimate, based on what is believed to be the average practice, the price of bottled gas and electricity will be equal for cooking if the price of fuel per pound is 3.5 times the cost of electricity per kwhr." Both gas and electrical cooking equipment have improved in efficiency during the past 15 years. We do not know how much, but the changes have probably been roughly parallel. Bulletin 1073 says that for overall cooking, top burner and oven, gas ranges use from 1.82 to 2.33 times as much energy as electric ranges. The average of those two figures is 2.10. Suppose we take that figure, relate it to the Btu content of 1 kw and 1 lb. of propane, and see where we come out.

We know that one kwhr equals Btu, and 1 lb. of commercial propane equals approximately 21,668 Btu.

$$21,668 \div 3415 = 6.35$$

Since 1 lb. of propane gives us 6.35 times as many Btu's as 1 kwhr, and the relative efficiency of the kw is said to be 2.1 times as great in a domestic range as the same number of Btu's derived from propane, we can divide 6.35 by 2.10 and arrive at the conclusion that 1 lb. of propane will do almost exactly three times as much cooking as 1 kwhr. That means that we can pay three times as much for the pound of propane as for 1 kwhr and the cost of cooking is the same with either fuel. This gives us a handy formula as far as cooking goes. The figures given in Table No. 1 were calculated on formulas derived in the above manner, and giving the prices per kwhr for electricity, and per pound and per gallon for propane, to bring the monthly cost to the same total for the same operations.

A careful study of this table, analyzing it for competitive comparisons, can be very rewarding. You will note that your price can be three times as much per pound, or 13 times as much per gallon, as the per kwhr price of electricity, and you still remain competitive. That's a sort of negative approach, so let's turn the idea around, and give it some guts. If you sell gas for 19 cents per gallon, the customer cooking with electricity must buy his power at 1½ cents per kwhr, or he is paying too much for his fuel. L. P. gas will cost less. There are not too many places where cooking power can be bought for 1½ cents, and in most of these, L. P. gas can be bought for considerably less than 19 cents per gal. If you are troubled with electrical competition, the idea outlined above can be developed into a terrific punchline for all your advertising. And don't forget to quote USDA Technical Bulletin 1073 as your authority. If you use it aggressively enough in your promotion, the competitor will not be able to use it effectively in his.

Bulletin 1073 gives us a different set of relative efficiencies between electricity and gas in the laboratory tests which are supposed to duplicate the typical use of hot water by the



TABLE 1

## Domestic Range "Break-even" Costs Electricity vs. L. P. Gas

(Second and third columns give rates at which L. P. gas may sell to equal the cost of electricity as quoted in first column. If your local L. P. gas price is in a lower line than the local electrical rate, read left to see the price at which power must sell to equal L. P. gas economy.)

Electricity per kw hr	Propane	
	per lb.	per gal.
.08	.24	.92
.06	.18	.76
.05	.15	.64
.04	.12	.51
.035	.105	.45
.03	.09	.38
.025	.075	.32
.020	.060	.26
.0175	.0525	.22
.0150	.045	.19
.0125	.0375	.16
.01	.03	.13

Figures based on average of utilization of energy tests reported in Technical Bulletin 1073, USDA.

family of four. Taking their figures of 38 gals. six days a week, and 78 gals. on wash day, and making a weighted average of the relative efficiencies quoted, we come up with the information that 1 lb. of propane will heat as much water as 3.22 kw hrs, so to be on an equal cost footing, the pound of propane may cost 3.22 times as much as the kw hr of electricity. On this basis, we construct Table No. 2.

### Propane 16% Better

Pamphlet 1073 also gives figures based on the American Standards Association (ASA) test, which is used by the AGA Laboratories in testing hot water heaters. On the basis of these tests, propane shows up 16% better than in the special "family of four" test devised by the Bureau. In this test, the lb./kw factor is not 3.22, but 3.72. This does not prove that one or the other of the test procedures is wrong. The Bureau tests represent a condition closer to average use of a 30 gal. gas water heater (which it

takes a 66 gal. electric heater to equal in output), while the ASA test is based on the most severe draw-off condition that the 30 gal. heater is likely to encounter.

Even without going to the ASA test figure of 3.72, the Bureau tests give propane a good case on comparative cost. We suggest that you use Table 2 as your basis for quick calculations on water heating, then if the customer makes more severe use of the heater there will be extra efficiency and lower costs, which will be pleasing to the customer—and quite the reverse of the customary sales tactics in the electrical industry. Their salesmen are almost universally trained to estimate their cooking and water heating costs on the lowest possible figure in the scale which could be applicable to those appliances. It does not always work out this way. In a high percentage of cases the monthly bill is higher than the salesman estimated, which the customer finds out by experience after he has paid for the appliance and the installation costs.

### The "Break-Even" Costs

Tables 1 and 2 give the "break-even" costs for electricity and propane in these two basic appliances. The question now arises, "What does electricity actually cost?" Electric power companies set their rates up on a sliding scale, aimed to encourage the use of additional appliances by giving lower prices for higher consumption. The rate structure is not based on the number or type of appliances used, but on the quantity of current consumed. The range or water heater may or may not fall in the low bracket, depending on the amount of current consumed to meet the customer's other requirements. Furthermore, both the base rates and the rate structures differ widely in various parts of the country. In some classes of service, electric rates in New England are approximately 2½ times as high as they are in the TVA region. Typical rate schedules for three widely scattered parts of the country are given in Table No. 3.

In estimating comparative costs of operating appliances on electricity and L. P. gas in your locality, you will need to work this out on the basis of the rates that your customer

will be required to pay. This is not difficult, but you will need to make a separate calculation for each prospect. Chris Neely, engineer for the LPGA, has worked out simple forms, based on the data given in Bulletin 1073, on which it is quite simple to develop comparative costs with LPG and electricity under identical conditions. The fairness of these estimate sheets can not be very well challenged by the electrical industry, because they are based on test reports produced for the National Electrical Manufacturers Association. Furthermore, the extra cost of operating the electrical appliances over and above the customer's previous electrical requirements provides a basis for direct comparison of this cost with the cost of using a corresponding appliance on L. P. gas.

### Cost Estimate Sheets

Using the sheets prepared by Neely as a basis, we have developed a suggested comparative cost estimate folder, which can be duplicated by any L. P. gas distributing organization. This appears on pages 37 to 40, at the end of this article. It seemed that additional sales advantages could be gained by completing the cost comparison to include installation and maintenance costs, and project the calculation over a ten year period. There are very large areas in the United States in which the ten year saving will more than pay for the L. P. gas appliance. Showing the saving on a ten year basis is far more dramatic and convincing than talking in terms of saving possibly two or three dollars per month.

So far we have talked about comparative cost figures entirely on the theoretical or estimated basis. There are many people who have a natural allergy to estimates, so your estimated costs, no matter how carefully prepared, fail to carry conviction. They need to be backed by a little evidence that is local and convincing.

Every L. P. gas operator has access to people who are cooking and heating water with electricity. Most of them are convinced that their power bills are at least a little bit too high. That may be only because these people are human, but it may also be a legitimate gripe, because the electric salesman promised them greater



## Here Is How We Can Beat This Competition

TABLE 2

### Water Heater "Break-even" Costs Electricity vs. L. P. Gas

(Second and third columns give rates at which L. P. gas may sell to equal the cost of electricity as quoted in first column. If your local L. P. gas price is on a lower line than the local electrical rate, read left to see the price at which power must sell to equal L. P. gas economy.)

Electricity	Propane	
per kwhr	per lb.	per gal.
.08	.258	1.12
.06	.193	.84
.05	.161	.70
.04	.129	.55
.035	.116	.48
.03	.0966	.41
.025	.0805	.34
.02	.0644	.27
.0175	.0565	.24
.015	.0483	.21
.0125	.0405	.17
.01	.0322	.14

Figures based on average of utilization of energy tests reported in Technical Bulletin 1073, USDA.

economy than they are realizing. Somewhere along the line, if you make enough calls, you will find three or four electric customers who are sufficiently peeved to give you copies of their monthly bills. Those who have the highest bills are the ones who are most likely to be willing to give them to you.

While you are looking for high electrical bills to add to your sales kit, there is a golden opportunity to do a job that will be still more devastating to competition—replace some all-electric kitchen appliances with L. P. gas, then follow up and get testimonials in writing covering the decreased monthly costs, and listing all other advantages that the customers have noticed. We have heard of cases where householders have reported that a change from L. P. gas to electricity for broiling had resulted in the need for more frequent laundering of the kitchen curtains, and redecorating of the kitchen walls and woodwork. There may be some of these cases in your vicinity, but at

any rate it is not a bad idea to suggest. If the family likes steaks it might result in replacing a range. If they can afford steaks, they can afford to buy a gas range that will cook the steaks better and keep the kitchen cleaner.

So much for figures to use in selling. If L. P. gas appliance salesmen all over the country will make aggressive use of the information contained in Technical Bulletin No. 1073, as outlined above, our industry can turn the publication to our advantage. Howard White reminds us, in a bulletin to LPGA members, that the conclusions are more favorable to L. P. gas than might have been anticipated, for the actual ratio of electricity to gas in comparative energy utilization is proven to be narrower than the electrical industry formerly claimed. They formerly insisted that the ratio of efficiency in favor of electric cooking and water heating was approximately 3 to 1. By their own test we now have them down in the neighborhood of 2 to 1.

We can be assured that the electrical industry will take every possible advantage of the misleading impression that the average reader will get from reading page 2 of that bulletin. But possibly they have not heard the last of this. The Department of Agriculture does not like to be accused of bias—although in the matter of rural electrification they have not been exactly neutral. The Department of Agriculture listens to senators and congressmen, and those honorable gentlemen listen attentively to voters—particularly to strong organizations of voters.

Our industry needs strong organizations, both statewide and national, now as never before. But no industry organization can be stronger than the individual companies in the industry make it. Not just financial support. Even more important is mental and moral support, and personal participation by every industry member in the phases of the fight which can only be prosecuted successfully through group effort.

It might just be that the right amount of spadework in the proper places would influence the Department of Agriculture to publish a sequel to Technical Bulletin No. 1073,

giving an analysis of comparative costs of operating ranges, water heaters, and refrigerators on electricity and liquefied petroleum gas in about 40 different areas well distributed throughout the United States. We now have a beautiful foundation for such a document. The research would be extremely simple—the Federal Power Commission knows the cost of electrical service all over the country, and a postcard survey could bring in the prices of L. P. gas. The Bureau of Human Nutrition and Home Economics must have some technician who could correlate the data and write the report—particularly if the liquefied petroleum gas industry could arrange to underwrite the cost of preparation.

Wouldn't you like to see a government bulletin proving, in terms of dollars and cents, that the tests reported in Technical Bulletin No. 1073 build up a very strong case in favor of L. P. gas? Teamwork might get it. What are we waiting for? While we are in competition, let's compete.

TABLE 3

### Typical Residential Rate Schedules

Otter Tail Power Co.  
Bemidji, Minn.

	Per kwhr
First 12 kwhr, \$.75 .....	.06 1/4
Next 38 kwhr .....	.05
Next 50 kwhr .....	.03
All over 100 kwhr .....	.02

South Kentucky Rural Electric  
Cooperative Corp., Somerset, Ky.

First 30 kwhr, \$2.50 .....	.08 1/2
Next 50 kwhr .....	.04 1/2
Next 120 kwhr .....	.02 1/2
Over 200 kwhr .....	.01 1/2

Pacific Gas & Electric Co.  
Southwest Coastal Area  
Central California

Meter Service Charge, \$.50 per mo.	
First 35 kwhr .....	.035 to .039
Next 165 kwhr ....	.025
All over 200 kwhr ..	.012



# ◆ ESTIMATE ◆

## ***Comparative Costs of Installing and Operating Electrical and L. P. Gas Appliances***

Prepared especially for \_\_\_\_\_

Much confusion exists over the relative cost of operating domestic appliances, particularly ranges and water heaters, on electricity vs. L. P. gas. In Technical Bulletin No. 1073, recently issued by the Bureau of Human Nutrition and Home Economics of the U. S. Department of Agriculture, we have an authoritative basis for preparing comparative cost estimates.

The estimates on pages 2 and 3 of this folder were prepared on the basis of test results reported in Bulletin 1073, taking into consideration the local rates for electric service and L. P. gas, as set forth below.

Since appliances are a long term investment having an average useful life in excess of 10 years, their total costs should be calculated for that period, including the total costs of purchase, installation, operation, and maintenance. This has been done for you on page 4.

### **ELECTRIC RATE SCHEDULE**

\_\_\_\_\_  
(NAME OF POWER COMPANY)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### **L. P. GAS RATE SCHEDULE**

\_\_\_\_\_  
(YOUR COMPANY NAME)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

• Prepared by \_\_\_\_\_

\_\_\_\_\_  
(NAME AND ADDRESS OF YOUR COMPANY)



# ELECTRIC WORK SHEET

- Here is how to find out what appliance use costs in your area. Using your local rates as a guide, fill in the appropriate blanks. These calculations will give you the increase in an electric bill when the appliance or appliances shown are added to the electric load.

## Cost to Operate An Electric Range — No Electric Refrigerator in House

202 KWH cost \$.....  
 \*minus 70 KWH cost \$.....  
 Increased cost for 132 KWH equals \$..... (For addition of electric range)

## Cost to Operate An Electric Refrigerator — No Electric Range in the House

105 KWH cost \$.....  
 \*minus 70 KWH cost \$.....  
 Increased cost for 35 KWH equals \$..... (For addition of electric refrigerator)

## Cost to Operate Electric Range and Refrigerator

237 KWH cost \$.....  
 \*minus 70 KWH cost \$.....  
 Increased cost for 167 KWH equals \$..... (For addition of electric range and refrigerator)

## Cost to Operate Electric Water Heater If "Off-Peak" or "Limited-Use" Power Is Sold for This Purpose

Increased cost for 391 KWH equals \$..... (For addition of electric "off-peak" water heater)

## Cost to Operate Electric Water Heater, at Normal Residential Rates, If Electric Range and Refrigerator Are Used

628 KWH cost \$.....  
 \*\*minus 237 KWH cost \$.....  
 Increased cost for 391 KWH equals \$..... (For addition of "normal rate" electric water heater)

## Cost to Operate Electric Water Heater, at Normal Residential Rates, If Electric Range and Refrigerator Are Not Used

461 KWH cost \$.....  
 \*minus 70 KWH cost \$.....  
 Increased cost for 391 KWH equals \$..... (For addition of "normal rate" water heater only)

\* Average use/month for house lights and small appliances.

\*\* Average cost per month for house lights and small appliances plus refrigerator and range.



# LP-GAS WORK SHEET

- Using your local L. P. gas price schedule, figure gas costs as follows, for one month's operations. Values assigned are those from the Department of Agriculture in Technical Bulletin No. 1073.

## RANGE 899,347 Btu's/month — which is the same as:

9.8 gallons	Propane at \$...../gallon	Cost \$.....
or 357 cubic feet	Propane at \$...../cu. ft.	Cost \$.....
or 90 decitherms	Propane at \$...../decitherm	Cost \$.....
or 41.6 pounds	Propane at \$...../pounds	Cost \$.....

## REFRIGERATOR 1,259,408 Btu's/month — which is the same as:

13.7 gallons	Propane at \$...../gallon	Cost \$.....
500 cubic feet	Propane at \$...../cu. ft.	Cost \$.....
126 decitherms	Propane at \$...../decitherm	Cost \$.....
58.2 pounds	Propane at \$...../pounds	Cost \$.....

## WATER HEATER 2,570,655 Btu's/month — which is the same as:

28.0 gallons	Propane at \$...../gallon	Cost \$.....
1020 cubic feet	Propane at \$...../cu. ft.	Cost \$.....
257 decitherms	Propane at \$...../decitherm	Cost \$.....
119 pounds	Propane at \$...../pounds	Cost \$.....

Constants used for Propane: 21,633 Btu's/pound; 2,519 Btu's/cubic foot; 91,686 Btu's/gallon.

Compare your cost with the electric costs you calculated on the Electric Work Sheets.

If you sell butane or mixes use the Btu demand figures for each appliance and convert to gallons, pounds, etc., on your own product heat content.



# ◆ COMPARATIVE ESTIMATE ◆

## Investment, Electrical Appliances

..... \$.....  
 .....  
 .....  
 Installation and wiring .....  
 Line costs ..... \$.....

## Investment, L. P. Gas Appliances

..... \$.....  
 .....  
 .....  
 Installation cost .....  
 Fuel System and piping .....  
**DIFFERENCE IN FAVOR OF** ..... \$.....

## Operating Costs

Electricity (from page 2) Per mo. \$..... Per yr. \$.....  
 L. P. gas (from page 3) Per mo. \$..... Per yr. \$.....  
**DIFFERENCE IN FAVOR OF** ..... \$.....

## Maintenance Costs

Electricity, Per yr. \$.....  
 L. P. gas, Per yr. \$ none  
**DIFFERENCE IN FAVOR OF** ..... (add or subtract) \$.....

**TOTAL SAVING PER YEAR** \$.....

**TOTAL SAVING, TEN YEARS** \$.....

## In Addition to This Saving, L. P. Gas Offers These Advantages:

- L. P. gas is **FASTER** — Bulletin 1073 says so.
- L. P. gas is **SAFER** — National Fire Protection Ass'n says so.
- L. P. gas is **MORE DEPENDABLE** — Even the Power Companies say so.
- L. P. gas is **CLEANER** — Every Electric Range Owner says so.



Sell more in '54

## Profit from the Temporary Load



Here is a typical example of the temporary load in the Chicago area. Two 1000-gal. tanks are used to supply the two-story, 10-room house in the background.

By Paul Hirsch

**"T**HE temporary suburban market is there to be handled or mishandled."

That is the feeling of R. M. Hemphill, vice president of Hicksgas Co., Midwest L. P. gas distributing firm which specializes in the temporary suburban market. Mr. Hemphill believes distributors can carve a profitable niche in this type of business, provided they concentrate on adequate supply and detailed servicing. The fact that Hicksgas is currently serving more than 2000 temporary customers indicates the value of his remarks.

The average distributor's first question when you begin talking about the temporary suburban market is, "What about natural gas?" Neither Mr. Hemphill nor Tom McElhinny,

vice president of Dri-Gas Corp., another major distributor in the Chicago suburban market, are worried about the utility threat. They both explain that the homeowner is always a couple of jumps ahead of the gas mains. When and if the mains reach all Chicago suburbs, there will be new L. P. gas customers living in new suburbs farther out.

This inability of the gas mains to keep pace with the exodus from the cities seems to be characteristic of the suburban movement, not only in Chicago, but in many other communities as well. Here's another factor for the LPG distributor to consider when he's analyzing possible utility competition: Is there enough natural gas storage capacity in the area to satisfy the demand?

Mr. Hemphill doubts that the Chicago area's three natural gas utilities—Public Service Co. of Northern Illi-

nois, Peoples Gas Light & Coke Co., and North Shore Gas Co.—will ever be able to serve all of the suburban market. He feels that, even if the trend to the suburbs stops tomorrow, Hicksgas will be in business for a good many years to come.

He reasons this way: In the suburbs already hooked into gas mains, demand for gas is already miles ahead of the utilities' ability to supply it. The three natural gas operators have several aboveground storage tanks scattered throughout the Chicago area, but construction of additional storage facilities is more expensive than it is worth, for two reasons:

Number one is today's high construction costs, which have skyrocketed since the original tanks were built, years before World War II. Reason number two is the unbalanced load in the Chicago area—



there are an average of six degree days in July and 1211 in January. Amortizing new storage tanks or new pipelines under conditions like this would take an unreasonably long time, the Hicksgas vice president believes.

Peoples Gas apparently agrees. The firm is planning to store additional gas in underground rock formations near Herscher, Ill., about 50 miles south of Chicago. But the capacity of the new facilities won't be enough to ever threaten Hicksgas or any of the other L. P. gas distributors in the Chicago area, Mr. Hemphill believes.

The suburban market he is talking about consists of a band about 55 miles thick which runs around the southern, western, and northern boundaries of the nation's second largest city.

The market is served by five major firms—Dri-Gas Corp., Hicksgas, Kay Gases Co. Inc., Skelgas Co., and Sa-Gas Co.

### No Official Count Available

No official count of the L. P. gas customers in the area is available. But Tom McElhinny estimates that "there must be several thousand at least." Some idea of the way the trend to the suburbs has affected outlying areas is available from the fact that Skokie, Ill., adjoining Chicago's northern city limits, has increased its population from 9700 in 1945 to 23,000 this year. Dri-Gas has customers in each of the 100 communities within the band which are normally classified as Chicago suburbs. Hicksgas, which claims to be the largest independent distributor in the Midwest, serves temporaries from its bulk plant at Roberts, Ill., 70 miles south of Chicago's Loop.

Hicksgas uses 2000-gal. tankers, with double tires on the rear axle, and equipped with 300 ft. of hose, to service suburban accounts. Generally, this is the same equipment used by the other firms in the Chicago area. The double tires prevent residential driveways from becoming overloaded and cracking. The extra-length hose permits the L. P. gas tank at the residence to be filled from a distance in locations where there is either no driveway or it is too narrow to accommodate a truck.

The typical suburban customer uses L. P. gas only for space heating.

Less than one-third of Hicksgas' accounts use the fuel for other purposes. According to Dri-Gas Vice President McElhinny, 75% of his firm's customers use L. P. gas for space heating and for hot water, and about 60% are space heat-cooking customers.

The five- or six-room house, a two-story brick structure with a forced-air furnace, is the typical suburban residence serviced by LPG in the Chicago area, officials of both companies indicated. The fuel consumption for such a home totals about 1600 gal. a year, which is handled by a 1000-gal. tank filled three times a year, normally. But tank sizes range as low as 500 gal.

The biggest part of Hicksgas' tem-

tration to convince a customer that bulk storage costs less in the long run:

Not long after the Skokie plant opened, Mr. Hemphill visited a prospect whose total storage capacity consisted of six cylinders holding a total of 150 gal. The prospect's furnace had a 200,000-Btu input. Mr. Hemphill figured the owner needed at least a 1000-gal. tank. Here's how the homeowner was convinced:

The furnace was burning 2200 gal. of propane a year. The bill for this fuel was 30 cents a gallon, a total of \$660 annually. In addition, there was a charge of \$100 for the cylinders, so that the total cost was \$760 the first year.

The Hicksgas official showed the



Propane from the 10,000-gal. tank car (left) flows through the pumphouse riser into a 30,000-gal. storage tank (behind the pumphouse) at the Skokie, Ill. bulk plant of Hicksgas Inc. During November 1953 42 cars were unloaded.

porary business emanates from its Skokie bulk plant, opened in September 1951. The plant has a 30,000-gal. storage capacity and requires an average of 24 LPG tank cars during the winter. Last winter, the Skokie plant sold 1,050,000 gal. of propane.

Bulk storage is the only means of handling the needs of the suburban customer who wants to use L. P. gas for space heating, according to Mr. Hemphill. He added that Hicksgas refuses to accept space heating business from a customer who insists on using bottles. The technique used by the firm to sell increased storage space consists of two points: one is that bulk storage is cheaper, the other is that bulk storage is safer.

Hicksgas frequently uses this illus-

prospect that, with a 1000-gal. tank, the fuel cost would be 13.5 cents a gallon, or a total of \$279 for 2200 gal., instead of \$660. Installing the 1000-gal. tank would cost \$276, or a total first-year cost of \$555, compared to \$760. In succeeding years, of course, the saving would be greater because there would be no charge for the tank.

Incidentally, Mr. Hemphill got his customer.

The Hicksgas vice president believes that bulk storage is the only way to guarantee the customer's goodwill. "In winter, when deliveries are difficult in our territory, it's impossible to service bottles or cylinders," he explained. "This prospect, before he became our customer, was



using 100 cylinders every winter. In really cold weather his furnace was emptying a cylinder every eight hours. Imagine trying to service a hundred accounts like that, or even ten, when there's snow on the ground. And if we weren't able to service such a customer, he would be perfectly justified in terminating his contract."

Hicksgas has found that servicing the temporary suburban customer requires even more time and effort than the rural L. P. gas account, but these extras have paid off in increased business. The reason for the additional investment in the intangible facets of the operation is, basically, that the ex-city dweller is much more dependent on the technician

than it is for him to pick up a wrench."

Because the suburban customer generally rates service so highly, Hicksgas does, too. Here is what happens when the firm installs a tank for a new suburban account:

First, the tank is sized to the Btu input of the furnace. If L. P. gas is desired for more than space heating—cooking or water heating, for example—these fuel requirements are added in. Then, the total is adjusted for the degree day factor.

Next, the tank is set on its foundation, 25 ft. from the home, and hooked up. The heating unit is adjusted to the burner manifold in the furnace, and the whole system is checked for safety. This involves checking the

pany from friends, neighbors, relatives, heating contractors, builders, and similar associates.

At least 20% of Hicksgas' present business has resulted from suburban residents who were already customers. In a typical case, the customer would begin by using Hicksgas to heat his home. Then, after a while, he would contract for additional deliveries to a summer cottage, farm, or factory. One such account, a trucking company owner, has been using Hicksgas in his home for some time. Now, he is experimenting with propane-powered trucks.

Mr. Hemphill believes that his company's emphasis on adequate supply and comprehensive servicing is a primary reason for this extra business.

None of the suburban distributors in the Chicago area make any special installations to prepare the customer for the switch to natural gas, with the exception of oversize tubing, which is used in some instances. Main reason is that they feel devices capable of handling both natural and L. P. gas—such as the universal orifice—are not efficient for either type of fuel.

When the time for the switch comes, the L. P. gas distributor returns a stated portion of the customer's investment in the tank. In the case of Hicksgas accounts, 40% of the tank price is returned, irrespective of the length of time it has been used or the size. The tank remains with the customer until the L. P. gas inside has been used up.

When the tank is removed, Hicksgas servicemen redrill the furnace orifice to accommodate natural gas, according to a specification table supplied by the utilities. Then, the servicemen attach a natural gas pressure regulator (Hicksgas keeps a permanent stock of these in its bulk plants), disconnect the pilot safety, and connect the pilot tube to the high side of the shutoff. They light the pilot and check it for safety. The customer pays \$15 for this job.

"Actually, we don't have to do all this," Mr. Hemphill explained. "The natural gas crew is always right behind our own, and they could handle the job just as easily. But we want the customer to be satisfied with our company and the L. P. gas industry as a whole."

That idea—customer satisfaction—is the key to profiting from the suburban market.



This home is typical of those springing up around Chicago's outskirts as a result of the "trend to the suburbs," a trend that is opening profitable business opportunities for the L. P. gas distributor throughout the country.

than is his country cousin, Mr. Hemphill feels.

"Many of the people who have come into our territory in recent years formerly lived in apartment buildings. By and large, they know nothing about the intricacies of heating systems. In the city, if they wanted heat, they turned a radiator valve. And if anything went wrong with the radiator, they called a janitor.

"The others, those who formerly lived in their own homes in the city, are a little more familiar with heating systems, but few have more than average idea of what L.P. gas is. And it is much more common for a homeowner in the city to pick up a telephone when something goes wrong

pilot, the 8-oz. solenoid on the burner manifold, and the burners.

In his contract, the Hicksgas customer learns that he is buying 24-hour service, seven days a week. "And we live up to that guarantee," said Vice President Hemphill. "Often our men are out making emergency repairs at two or three in the morning."

Such thorough servicing has paid off. When the Skokie plant opened late in 1951, Hicksgas didn't have a single customer in the surrounding area. The Skokie plant has been able to acquire its present list of about 950 accounts (including 750 temporaries) on the telephone. These customers, in most cases, have signed up with Hicks after hearing about the com-



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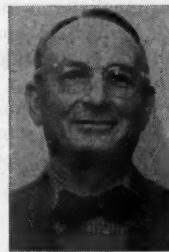
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Statements are processed in cycles of 500 accounts every two days. Operator places "Cycle-Matic" tray on portable stand alongside accounting machine. Statement, ledger card and journal are completed at single typing.



By **J. RAY HERRIN**, President  
Coastal Butane Service  
Summerville, South Carolina

## Savings of \$6,000 Results With Cycle Billing

**S**TARTING in 1940, Coastal Butane Service established some 900 accounts during the first three years of operation. Steady and rapid growth followed, and during 1953 our annual volume of business reached \$1,120,000, with more than 7800 accounts being serviced. This expansion of a "small business" to one of moderately large size was not without "growing pains," one of which was our bookkeeping system.

All the varying operating, maintenance and service problems which continued to arise as a result of our expansion we were reasonably able to cope with by rule of thumb, by careful study, or by drawing on the experience and practices of other dealers. But the office and bookkeeping problem had us buffaloed. Maybe it is because in this part of Carolina, we pretty well know Uncle George and Cousin Joe and couldn't refuse to extend credit to these old friends. Or maybe it is because our people hereabouts just don't like to bother with bills, and prefer to pay only when they receive a monthly statement.

At any rate, by 1948 we had 3000 accounts to go through every month in order to balance the books and make up statements. It was far beyond being a hand job any more. Our office manager, William L. Turner, declared we needed an accounting machine to do the job quickly and

efficiently. We chose a Remington Rand machine because of our favorable experience with that firm's adding machines and typewriters.

We had to add a second one a year later, because of more growth. In 1950, we started closing the books on the 27th of each month to try to ease the jam of work. And as 1953 dawned, we were really in a mess. With nearly 8000 accounts, it was usually the 15th of the month before the statements got out—sometimes even later.

On the one hand, this slowed up our collections. On the other, it made bad customer relations because Joe Green might receive a statement on the 18th for an amount he had paid on the 3rd, after the books were closed. There were five girls in the office, working plenty of overtime. The more tired they got, the more mistakes they made.

The solution seemed obvious. We could hire two more girls, which would cost us in Summerville \$4080 a year, and we could buy another accounting machine. So we asked the supplier's representative to come out and take our order.

"You'll have more bookkeepers than truck drivers if you keep this up," he said. "Can you hold off the order for a few days while I work up a plan?"

The plan was that we go to Cycle Billing, just as the big department stores, the telephone company, and

the gas utilities do. We could eliminate all daily posting, simplify statement preparation, end the month-end rush forever.

Having previously used Safe Ledger Trays, we were well aware of the value of insulated equipment. Our new Remington Rand Cycle Desks are also insulated to give us "point-of-use" protection and assurance that our accounts receivable are protected against fire 24 hours a day.

To shorten the story, we bought the idea. And this is what has happened: In the first year of Cycle Billing operation, we have saved the \$4080 we expected to spend for additional salaries. We saved another \$2040 because we found that four girls were enough in the office, instead of five. We saved the \$3000 we were willing to put into a third accounting machine.

By my arithmetic, that adds up to \$9000 or so, without counting in all the extra dollars we had been spending for overtime which is no longer necessary. These savings in the first year alone will virtually pay for the special equipment needed for Cycle Billing. And in every succeeding year we are going to save at least \$6000 in salaries.

In the new system each account has a ledger pocket. "Posting" consists of merely filing charge slip or payment receipt copies, previously taped and posted to the control, in the



correct pocket. No writing is done at all.

At statement time, the girl goes through every pocket and does the entire month's posting at one operation. The original statement and its carbon copy (which is our ledger card) are fed into the accounting machine. At the same typing, another carbon copy becomes our detail journal of the month's operations. Accounting machine totals are checked against controls for accuracy.

Zero-balance statements are put back into the pocket and re-used the following month. Before mailing the other statements, new statement forms are headed up by a typist and placed in the proper ledger pockets. Thus there is always a ready-to-use statement in the pocket, and we have eliminated the waste of addressographing the complete ledger and throwing away those forms that are not needed.

Our 8000 accounts are split up into sixteen trays in four Cycle-Matic desks. Each tray comprises one billing "cycle," and one cycle is done approximately every two days. Even in our peak months when nearly every account is active, one girl can process a 500-account cycle within one working day. Overnight, the "rush" was ended, and all of our statements have been going out exactly on schedule since Cycle Billing began in August, 1953.

With the rush and pressure gone, the human errors we had before are almost totally eliminated. When a mistake does occur, it can be found much more quickly and easily within

**Daily reports of charges** and credits from each branch are listed on adding machine to establish figures for control accounts on each cycle.



a cycle of 500 accounts than if we had to check over all 8000 customers.

The new system was completely set up for us by the Business Services Departments of Remington Rand. All the account names were in the correct folders, all the current balances were transferred, everything was ready to go. As far as our office procedures were concerned, one afternoon we were working with the old method and the next morning we were on Cycle Billing. It was just that smooth.

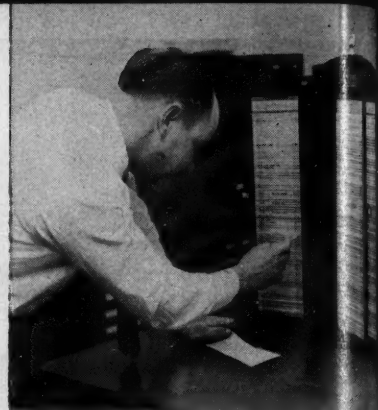
All of our accounts were "districted" generally by routes and locations, in order that billing would be somewhat related to deliveries. Every customer account was given a number: for example, C4-334. The "C" indicates a cylinder customer



**Posting of charges** and credits is speedily accomplished by dropping posting media into correct ledger pockets.

(tank patrons are lettered "U"); the next digit identifies the cycle billing tray number, and the final three figures are the account. Any ledger pocket can thus be located instantly.

Using account numbers instead of alphabetical or other arrangements means that all the cycles can always be kept approximately the same size for equal distribution of work over the month. If C4-334 was Phil Brown's account and he moved away or we lost him as a customer, we would simply put his name in the dead accounts file and assign the ac-



**Account numbers** are quickly located for any purpose by easy reference to this alphabetic index on "Kardex" rotary stand.

count number to the next new customer.

In each of our offices we have a Kardex Rotary Index Stand with Interlocking Tube Equipment, on which all customers are listed alphabetically. The index line shows address and account number—white strips for underground installations, and yellow strips for cylinder users. It takes about 15 seconds to find any name and get the proper account number, which must of course be entered on all charge tickets and receipts.

Every one of the ledger pockets within the Cycle-Matic desks has a Graph-A-Matic movable signal on the visible edge. The printed scale permits it to be used to show the month of earliest unpaid bill, but we apply the signal in a way that seems more practical for our purpose.

As the statements are reviewed before mailing, we pull those that are more than 30 days overdue and send a letter along with the statement. The Graph-A-Matic signal is then moved to the halfway position to show that letter No. 1 has been sent. If the amount gets to be 60 days overdue, we send a stronger letter with the next month's statement and pull the Graph-A-Matic signal all the way to the right. This indicates that the customer is now on a C.O.D. basis only, until the old bill has been paid.

There is nothing complicated about any phase of our Cycle Billing. It is, in fact, much easier than our previous methods, and we are thoroughly pleased with the results. We had gotten too big for our bookkeepers, but with the system described here we can grow twice as big again and never have any more difficulty in the accounting department.





**By Walter H. Hoagland**  
Fisher Governor Co.  
Westport, Connecticut

# The Relation of Safety and Insurance

FROM several sources, we have available today numerous guides to safe practices in the LPG industry. Are we following these recommendations in our operations?

Unfortunately, the answer is not an unqualified "yes." Most large L. P. gas distributors do follow the recommended practices, but this is not true of the entire industry—and as the result the industry as a whole has suffered.

There are two committees that do most of the constructive work in recommending safe practices—the LPGA's technical and standards committee and the safety committee. The cost of operating these committees is not realized by a number of LPG men; yet they are paying the costs and it is up to them to cash in on the results. These committees met three times during 1953, with approximately 40 persons in attendance at an average cost of \$400 per meeting per person. For the three meetings, the bill which the industry paid totaled almost \$50,000.

The work of these two groups gives the industry the recommended good practices needed for its operation. They finish any assigned subject to the satisfaction of the L. P. gas industry, and the industry is notified of the completion of the various assignments.

Two large distributors who are following the recommendations of the two committees illustrate what can be accomplished:

Personnel of a large distributor of L. P. gas recently were given safety awards from the National Safety Council in Marion and Winston Salem, N. C., and in Newport News, Va. In Marion, N. C., the award was presented by the town mayor who congratulated the men on their fine rec-

ord and stated that he and the people of Marion were proud to have the L. P. gas industry in Marion and appreciated the service. The L. P. gas drivers in the Marion area had a perfect no-accident record for five years during which time they had driven approximately 400,000 miles. In Winston Salem, N. C., the traffic director of the city said the L. P. gas distributors' drivers had had no accidents within the city limits during the past year. Mention was made of the conditions of the terrain and traffic in these two areas. Ice, snow, fog on mountain roads did not faze these North Carolina drivers. Extremely congested traffic that exists in the thickly populated area served by these drivers did not keep them from maintaining a perfect record in 1952.

Such accomplishments are lost sight of when an occasional accident occurs. Accidents are widely publicized, to the detriment of the entire industry.

With the entire industry following the recommendations of the two committees, and of other authoritative sources, not only would such accidents be further reduced, but proper insurance coverage would become obtainable at a reduced cost.

The work of these two committees should be better publicized. The LPGA Chicago office mails to every member a copy of the minutes of boards of directors meetings, containing the committees' recommendations; but not only are these copies not read carefully by a majority of the members, they are not even seen by most non-members.

It is my opinion that the LPGA has grown up to a point today where it needs an individual in its publicity department as an editor to prepare and edit for its members and for the trade journal magazines pertinent articles discussing clearly what the

LPGA is recommending for improvements in safety in the industry. Such information would definitely help everyone if he followed the same in his insurance coverage problems.

The recommendations of these committees are not the only sources of information on sound, safe operating practices. The business papers in the field have published some excellent information.

Furthermore, all manufacturers of L. P. gas equipment have available today service school material for anyone in the L. P. gas business. Members and non-members alike should avail themselves of the service school material available by the equipment manufacturers in the industry today.

In brief, here are the steps that should be taken by distributors to help make the entire industry conscious of the association's safety work, and in turn improve relations with insurance companies:

1. Further publicize the good work done by the National Technical and Standards Committee and the National Safety Committee by means of special bulletins from the Chicago office of LPGA.
2. Where distributors can afford to have same they should hire a safety engineer. He is an excellent asset to any large organization.
3. Where a small distributor cannot afford a safety engineer, assign this responsibility to someone in your organization who is capable of conducting a service school and safety school.
4. Conduct regular service schools using already available published materials and current articles in the industry's trade journals as a guide.
5. Use facilities available from the equipment manufacturers for conducting regular service schools.
6. Have some means of checking your finished installations to make sure they comply with the requirements of Pamphlet 58 and Pamphlet 52.

\*Abstracted from a talk at the Fall Conference of the South Central District of LPGA held recently in New York City.



# Code Cuts Complexities For Crutcher

By Carl Abell

**B**ACK in the booming days of World War II, as you may recall, getting help was something of a problem, but keeping the workers on the job was even more difficult. Tom Crutcher, Jr., manager of the Crutcher Sales Co., Louisville, Ky., was convinced that he had more than his share of trouble with occupational transients. On top of his difficulties with employees, even the landscape was working against him.

The Kentucky scene is no network of section-line roads, straight as the path of righteousness, like the prairie country west of the Mississippi River. Louisville is located on a bend of the Ohio River, where it swings close to the northern edge of the limestone plateau that forms the famed Kentucky bluegrass region. Numerous small valleys and defiles cut back into the great stone table, with ridges standing up sharply between. The

main highways into the surrounding country follow the valleys, spreading out from Louisville like the fingers of an enormous pair of hands. The minor roads, on which most of the people in the rural area live, connect these diverging highways, and work back along the crests and contours of the ridges. Only the narrow river bottom offers the possibility of an orderly arrangement of roads, and even there the influence of the wandering early cattle trails takes precedence over longitude and latitude. A driver who is not thoroughly familiar with the territory needs a map, a compass, boy scout training, and the instincts of a homing pigeon.

Crutcher Sales Co. had no particular trouble in making deliveries from the time they started operating in 1926, until they encountered the labor upsets of World War II. They had always been able to hire

local boys who had grown up in the surrounding hills, and knew their way around. Came the war, and everything was different. Due to enlistments, the draft, and the attraction of the war industries, there was a constant turnover of drivers, and at times it was impossible to find men who knew the roads in the local territory. New drivers sometimes searched for hours to find customers who waited impatiently for gas to cook their overdue meals. Crutcher had a thousand good Pyrofax gas customers out in those hills, if the drivers could only find them.

The situation came to a head late one afternoon when Tom Crutcher received a phone call from a customer, telling him that one of his delivery trucks had been sitting beside the road out in Mockingbird Valley since about ten that morning, with no driver in sight. That checked with the fact that this particular driver, who had been on the job only three days, had failed to telephone to the office at noon to pick up any emergency instructions. Tom took the pick-up and made haste. On the seat of the abandoned truck he found the day's route slip, the exact change covering the two deliveries the driver had made that morning, and the cryptic note pencilled on the back of a spare invoice, "I quit." Somewhere on earth is a former driver for Crutcher Sales Co. who can collect the three days pay that was due him, if he will call at the company office.

Crutcher spent the next few weeks reworking his routes so even a green driver could find his way around, and setting up a code to enable the drivers to locate customers' houses quickly. Each route consists of a portion of a major highway, and the feeder roads that tap the surrounding neighborhood. No more than 30 customers are included on any route, and in the driver's book, each route is carefully described from beginning to end, so he knows exactly what turns to make to stay "on the beam." Customers were given numbers in sequence on each route, and a code was developed which identified each customer's house. This information was put on an addressograph plate, which is imposed on every piece of paper used in handling the account.

**20-1**

NAME: H. L. Arnold  
STREET ADDRESS: Trio Ave.  
CITY OR TOWN: R. 2, Box 340  
COUNTY: Louisville, Ky.  
ACCT. & CODE: 11-7183  
TELEPHONE: 511-012-36  
NO. IN HOUSEHOLD: 2  
HOME OWNER: ☒  
TRANSFER: ☐  
AVERAGE: ☐  
GAS TOTAL: 100.00  
ROUTE: 100.00

PRICE: 88¢  
TERMS: Credit  
EFFECTIVE: 1/1/50  
CUSTOMER'S CLASSIFICATION: DOMESTIC ☒ COMMERCIAL ☐  
CYLINDER: 100  
DATE INSTALLED: 1-1-50  
TYPE GROUP: H 90-4-4-4  
RANGE: 100-4-4-4  
ELECTRICAL: 100-4-4-4  
WATER HEATER: 100-4-4-4  
MISC. APPLIANCES: 100-4-4-4  
SPECIAL BILLING INSTRUCTIONS, ETC.:  
CUSTOMER LOCATION GUIDE:

**COLLECTION FOLLOW-UP**

JAN	
FEB	
MAR	
APR	
MAY	
JUNE	
JULY	
AUG	
SEPT	
OCT	
NOV	
DEC	

**CYLINDER RECORD**

DATE	DESCRIPTION	DEBIT	CREDIT	BALANCE
3-13-49	100-4-4-4	100.00		100.00
5-8-49	100-4-4-4	100.00		200.00
8-22-49	100-4-4-4	100.00		300.00
11-10-49	100-4-4-4	100.00		400.00
2-1-50	100-4-4-4	100.00		500.00
5-10-50	100-4-4-4	100.00		600.00
8-10-50	100-4-4-4	100.00		700.00
11-10-50	100-4-4-4	100.00		800.00
2-1-51	100-4-4-4	100.00		900.00
5-1-51	100-4-4-4	100.00		1000.00

**LEDGER ACCOUNT**

DATE	DESCRIPTION	DEBIT	CREDIT	BALANCE
3-13-49	100-4-4-4	100.00		100.00
5-8-49	100-4-4-4	100.00		200.00
8-22-49	100-4-4-4	100.00		300.00
11-10-49	100-4-4-4	100.00		400.00
2-1-50	100-4-4-4	100.00		500.00
5-10-50	100-4-4-4	100.00		600.00
8-10-50	100-4-4-4	100.00		700.00
11-10-50	100-4-4-4	100.00		800.00
2-1-51	100-4-4-4	100.00		900.00
5-1-51	100-4-4-4	100.00		1000.00

Fig. 1—The code which locates and describes the customer's house is stamped on the upper right hand corner of an addressograph plate, and is stamped on every paper used in handling the account.



The plate is made up to fit the heading of the standard Pyrofax "terms card" (Fig. 1), which is a combination sheet giving the complete record and history of the account, and constitutes the basis for the control of the operation. At the left side of the plate, the regular mailing address appears, and the code is stamped in the upper right hand corner. On the top line, the first number is the route, the second is the customer number on that route. Thus, in the example illustrated, H. L. Arnold is the first customer on route 20. Customer 20-2 was the next customer on the route as originally set up. If any new customers are obtained between 1 and 2, they appear in the code as 1A, 1B, etc., so the original planning of the route is still the key to the code.

The code identifying the home of the customer is as follows, and in this order:

- (1) Side of the road — L or R.
- (2) Type of construction — S for stone.
- (3) B for ordinary brick.
- (4) Ins for insulbrick.
- (5) F for frame.
- (6) Color of roof.
- (7) Type of fence.

Returning to customer H. L. Arnold, the code tells the driver that the house is near the beginning of the route; on the left hand side; frame type house; red roof; wire fence. With this description, a new driver can probably pick out the house as far as he can see it. If there happens to be two similar houses close together, he completes the identification by looking for mail box No. 540, which shows up in the address.

To permit flexibility for accommodating future growth, route numbers, up to 60 were assigned to the Kentucky area which is served by the company, and numbers from 70 up indicate routes across the river in Indiana. There were not 60 routes in Kentucky, so beginning with No. 1 at the Ohio River east of Louisville, the sequence continues around to the river on the other side of the city, with numerous gaps reserved for possible future routes in territory which seemed likely to become more thickly populated in the future. Many of these new routes have been established, and the system is still sufficiently flexible to be useful several years into the future.

The availability of the address-



Rough terrain and irregular pattern of roads around Louisville creates a tough problem for new route drivers.

ograph plates permits several other innovations which speed up operations and keep the customer end of the business under finger-tip control. Using the route numbers as the index, all account cards are filed numerically. Filing experts tell us that numerical filing is superior to alphabetical filing because number combinations can be located quicker than letter groups, and because the average worker is less likely to make mistakes when working with numbers. It is certainly easier to locate 20-1 in a numerical file than to find "H. L. Arnold" in an alphabetical file including several other Arnolds.

Since all paper work originating in the office in connection with customer accounts carries the code numbers, it is only necessary to cross reference alphabetically so the numbered file can be located in case the customer comes in, or calls in, and does not give the code number. Let's start with a phone call, and see what happens, with particular emphasis on the simplicity and speed of the operations.

"This is Mrs. H. L. Arnold. Will you have the driver replace an empty cylinder on his next trip?" While she is talking, Tom Crutcher, or any other employe who answers, flips open the Flexoline group-visible alphabetical index to the "A" page, and notes that the code number is 20-1. He tips the 20 guide card forward in

the "terms card" file, which is on wheels at his elbow, and lifts out card 20-1. He enters on the cylinder record section, T 8/24 FNT, which means "Telephone order received 8/24. Leave full cylinder next trip." On another sheet of paper on which the day's orders are accumulated, he enters, "20-1." Looking at the ledger section of the card and the collection follow-up panel, he notices that the customer pays promptly, so he adds on the order sheet "cr", which means that the credit is OK. Otherwise the notation would be "P", which means "Pay the driver", a term which this company uses for psychological reasons instead of the customary "Collect on Delivery."

Toward the end of the day somebody in the office, generally Tom Crutcher or Charley West, who does a little of everything including supervision of customer service, takes the sheet with the accumulated orders over to the addressograph cabinet (Fig. 2), picks out the customer plates, which are filed by route and customer number for quickest possible selection, and makes up the delivery orders, which are nothing more nor less than invoices made out in advance. This is the standard Pyrofax invoice form, (Fig. 5), which is made up in duplicate at the printing plant. The price of the gas is entered in the appropriate places on the form, and delivery instructions are





Fig. 2—Charley West uses the addressograph to short-cut the preparation of delivery instructions and invoices.



Fig. 3—Ordering by mail is encouraged. Charley West checks a customer's account before coding the delivery order.

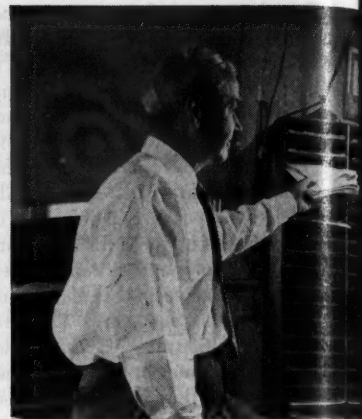


Fig. 4—Tom Crutcher takes out the delivery orders for the route which will be served the next day.

entered on the upper left hand corner. "TC" indicates that Tom Crutcher prepared the order, and that the customer's credit is good. If it is not initialed, the driver will check the customer's card the day he makes delivery, to see if there is a charge outstanding at that time. If so, he will try to bring in the money, along with that for the fresh cylinder. "8/24" indicates the date of the order, and "MFNT" means "pick up empty and leave full cylinder on the next trip." The other lines stamped on the invoices opposite "terms," and the "pay the driver" on the lower half, are put on the invoices with the addressograph machine in advance.

Orders may be placed in person by customers dropping in at the office or the up-town store, or may come in by mail. To facilitate these mail orders, which can be handled at a saving of time for all concerned, each customer is given an advertising calendar in December of each year. This calendar contains a page of six postage-paid order cards, which may be filled out by the customer and dropped in the mail. These up-town and mail orders are all processed with the office telephone orders, and the delivery-invoice forms are all made out together (Fig. 3).

The day's delivery orders are then sorted into the numbered boxes in the route rack (Fig. 4), which is similar to sorting mail in the postoffice. This rack provides a visible control over the need for serving the various routes. The box with the most orders, judged by the height of the pile, is the logical one to deliver tomorrow.

It will probably not contain enough orders to take a full load, so it is combined with another route that can be reached with a minimum of extra driving, or with a route on which some customer has asked for quick delivery. Before starting out, someone in the office looks through the customer cards on those routes quickly to see if there are any other customers who would normally have been due to order another cylinder, but who had failed to do so. Delivery orders are prepared for these customers also, but instead of having the date of the order noted, they are marked "Sh", which means that this customer should have ordered. The

driver makes these calls along with the ordered stops, and makes the deliveries in a high percentage of the cases. The customers appreciate this watchfulness on the part of the company.

Before the drivers leave in the morning, the "daily delivery report" (Fig. 6) is filled out with a summary of the driver's instructions for customer calls, and the data necessary for the operating record of the truck. The customer calls are indicated by route and number only as shown by the delivery order-invoices, which constitute the driver's working instructions for the day. If it is necessary to reach a driver during the day,

TC T 8/24 MFNT

**THE CRUTCHER SALES COMPANY**  
301 RIVER ROAD  
LOUISVILLE 2, KENTUCKY  
TELEPHONE: JACKSON 0197 — WABASH 2801  
Distributor of **Purex Gas**

NAME: H. L. Arnold  
ADDRESS: Trio Ave.  
R.R. 4, Box 540  
Louisville, Ky.

20-1  
L-F-RR-WFence

ACCOUNT NO.:  
ORDER NO.: 805

DATE: 8/24

AMOUNT \$: 8.00

TEAR OFF AND USE THIS STUB TO IDENTIFY PAYMENT

**THIS IS YOUR GAS BILL**

ACCOUNT NO. FULL CYLINDERS DELIVERED: 8  
UNIT PRICE: \$1.00

EMPTY CYLINDERS RECEIVED: 8

AMOUNT OF BILL: \$8.00

PAY THE DRIVER  
when delivered

Amount of cylinder returned after this delivery

ABOVE FULL CYLINDERS ACCEPTED BY CUSTOMER IN EXCHANGE WITH LOANED CYLINDERS CONDITIONS ON REVERSE SIDE

CUSTOMER: H. L. Arnold DATE: 8/24 PER: DATE

THE CRUTCHER SALES CO. DISTRIBUTOR

Fig. 5—The invoice is also the delivery instructions complete with credit information, all in code. Note the route and customer identification code to the right of the name and address.



The Crutcher Sales Co. has been a Pyrofax dealer continuously since

**Fig. 6**—The daily delivery report shows the drivers' approximate locations at any time during the day, and when completed is the record of the day's operations.

Tom Crutcher rates his code system of handling deliveries and accounts as a great time saver, and considers that it has been one of the most important factors in making the operation profitable.



# LPG Curing Brings Higher Returns On Tobacco

By H. H. Slawson

**E**NTHUSIASTIC endorsement of L. P. gas heat for curing tobacco comes from Garnett E. Owen, owner of Black Valley Farm, Rt. 1, Auburn, Ky.

In 1952 Owen raised 3.8 acres of Burley tobacco, which, when harvested, averaged 2,870 pounds per acre, and another 7.8 acres of a local variety, known as "Old Sucker," which ran 2,930 pounds to the acre. When harvest time came around, in September, last year, heavy rains started and never let up until four inches of precipitation had soaked the fields.

Owen went ahead however, cut his crop and housed the Burley in one curing barn, 40 x 72 feet in size, where it was hung in four tiers, each four feet apart. The "Old Sucker" kind he hung in a second barn. It was all so thoroughly wet that Owens decided to try out a new idea, equip the Burley barn with L. P. gas and leave the other to be heated by the coke-curing method he had always previously used.

Installation of the L. P. gas drying system was made by Southern States Franklin (Ky.) Petroleum Cooperative, which put in a storage tank and gas lines to 24 burners, each equipped with wire-frame shields.

Results were astounding, according to the report made in the *Cooperative Farmer*, house organ of Southern States Cooperative, which goes to the majority of tobacco producers in Maryland, Delaware, Virginia, Kentucky, and Tennessee.

The tobacco that was hung drip-



Garnett Owen displays his choice tobacco leaves, which are nearly ready to harvest.

ping wet in the gas-equipped barn brought the largest returns in Simpson county, and Owen figured that, by using the L. P. gas he made \$869.37 more per acre than he did on the part of the crop which was cured by coke. He also saved over seven hours of labor per acre, in comparison with coke curing.

A total of 1,345 gallons of L. P. gas was used and drying time with the gas was the same as with coke—from 21 to 30 days. When the wet tobacco was first hung, the automatic thermostat on the burners was set at 90 degrees and the humidistat was set at 67 percent. On sunny days the burners were operated only about one-third of the time, while on foggy or rainy days they were left burning until temperature and humidity reached the above levels.

Owen particularly praised the uniform heat given off by the burners. According to his statement the moisture is removed from the tobacco evenly and chemical changes in composition of the leaves occur at just the right time to produce perfect results. House burning of tobacco is also eliminated by L. P. gas, he found.

During the curing period last year farmers from all over the area came to see how the operation was progressing, and latest word from Auburn was that Owen put up a new curing barn for his 1953 crop. It is the largest in Simpson county, 91 feet long, 64 feet wide and 34 feet high at the center. It is four tiers high, with seven feet allowed between tiers. All

lumber was creosoted, and aluminum was used for the roof.

And, of course, it has been equipped with a complete L. P. gas heating system.

County Agent Woodson Coats of Simpson county was quoted in the co-op report as saying: "Garnett Owen has one of the most improved farm operations in the county. He is a good farm manager and has a lot of good ideas about new farming methods."

This is exemplified by the fact that Owen is pioneering the use of irrigation as a means of protecting his tobacco crops against the periodic drouths which reduce the production and quality of the crop. His portable sprinkler system, supplied with water pressure developed by belting his tractor to the pump, is one of the first in this part of Kentucky.



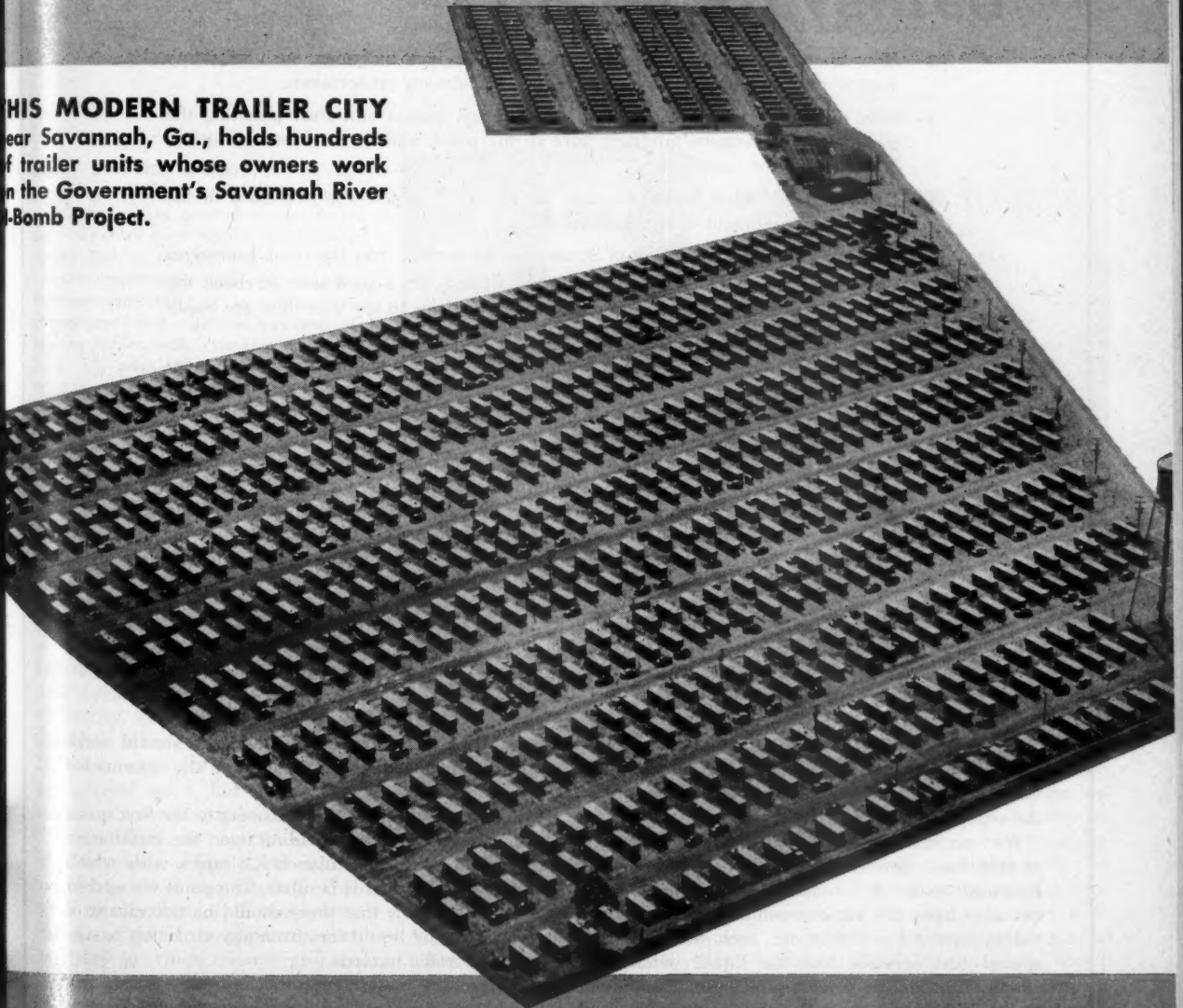
These burners and shields are placed on the floor of the curing barn, spaced at about 8-ft. intervals.



Let's make SAFETY Everybody's Business

# L. P. gas can be as Safe in Trailers as in Homes

**THIS MODERN TRAILER CITY**  
near Savannah, Ga., holds hundreds  
of trailer units whose owners work  
on the Government's Savannah River  
H-Bomb Project.



## SAFETY MEETING

Date \_\_\_\_\_  
Time \_\_\_\_\_  
Place \_\_\_\_\_





Use this suggested program as a guide for **SAFETY MEETING No. 14** which appeared last month. After the meeting the **SAFETY POSTER** which appears on the opposite side of this page should be posted on your bulletin board as a reminder for your next meeting.

## Suggested Program for Safety Meeting

- 1—Complete the attendance record, noting the absentees.
- 2—How about unfinished business relating to previous meetings, such as safety suggestions, and progress reports on projects already undertaken.
- 3—New business. Time to look ahead to the slack season and start planning the summer's maintenance program, both in the plant, and at the customer installations.
- 4—Discussion of "What Makes Storage Tanks Safe?" which was published in the February installment of the Safety Series.
- 5—Throughout most of the United States we are coming into the most hazardous season of the year from the standpoint of driving. It's a good idea to check the brakes, tires, and tire chains on all company vehicles to see that they are ready for slippery going.
- 6—Announce date, study assignments, and any special assignments for the next safety meeting. All employees should be provided with copies of NFPA (or NBFU) Pamphlet 58, and the state and local codes applying to LPG installations in house trailers. Someone should be assigned to find out what protective precautions, if any, the state and local inspectors take in connection with propane equipped house trailers. Someone should also ascertain the views of local trailer park managers on the trailer fuel problems. It would also be worthwhile to have someone make a quick survey of the fuel installations on quite a number of house trailers in your locality. The sales lots and trailer parks offer the means of making such a check-up very quickly.

### DISCUSSION GUIDE FOR "What Makes Storage Tanks Safe?"

This is one subject on which it should be possible for every organization operating a bulk plant to provide complete mechanical exhibits covering all of the equipment discussed.

Why not have on hand at this meeting a sample of each basic device illustrated on page 55 of the February issue? If you have them available, why not also have the various combinations of check valves, excess flow valves, etc., such as are used for special fuel services like the liquid withdrawal adapter for fueling tractor tanks, etc. Samples of the multi-valve, if used in your operation, would also be of related interest, and would serve to illustrate how every piece of approved equipment fits into the safety scheme outlined in Sections B, I, II, and IV, of Pamphlet 58.

In discussing the problems and questions on page

60 of the February issue, the leader should make sure that all employees understand the reasons behind the answers.

There could be several answers to the first question in Problem 5, depending upon the installation details of the particular truck tanks with which your organization is familiar. The point we wished to emphasize is that there should be two means of withdrawing liquid fuel from any tank that is subject to traffic hazards.

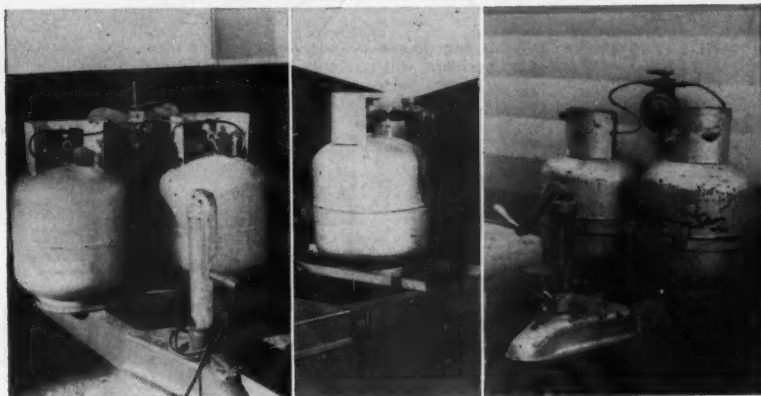
Since the material for the February Safety Article was prepared we have received details of a serious accident that occurred in Kentucky (see page 138), which occurred because a 1000-gal. tank was installed without the specified protective valves and mounted on an insecure foundation. Are there any such hazardous installations in your locality?





## House Trailer Fires Can Be Prevented

**Right:** Twin ICC cylinders on new high priced mobile home. Mounted with pressure relief valves pointed toward trailer wall. **Center:** Fuel tubing should have ample loop to provide flexibility. Single cylinder installations are not desirable. **Extreme right:** Manually controlled change-over and regulator mounted solidly to trailer wall, cylinders in correct position. Good



By Carl Abell

A GREAT many people still consider that L. P. gas is a dangerous fuel to use, in spite of the unimpeachable evidence that it is safer than electricity, safer than oil, safer than gasoline, safer than wood or coal. How do people get this idea? There are several ways, but mostly they read it in the newspapers.

At our office, we have the services of newspaper clipping bureaus in several parts of the country. They send us clippings of all the articles they can find in the papers in their territory in which butane, propane, or L. P. gas are mentioned. We read them to pick out news items of the trade, and as a general check on trends in the industry. The one subject which appears most frequently is fires and explosions in house trailers. More than half of the clippings that we now receive deal with these trailer accidents, and they show up with approximately four times the

frequency of similar accidents in permanent dwellings.

The frequency of these accidents in trailer homes is the worst black eye that our industry has had in the present generation. We must complete the statistics, and develop a true picture of the relative frequency of fires and explosions in trailers and in permanent homes, to realize just how serious this situation has become.

There are now, according to the latest estimate of the Trailer Coach Association, nearly 800,000 house trailers (they prefer to call them "mobile homes") in the United States. Most of them are equipped to burn propane, at least for cooking, and sometimes also for water heating, refrigeration, and comfort heating.

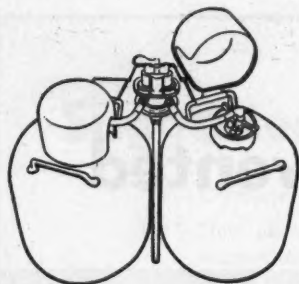
Our industry figures show that there are about ten times as many L. P. gas installations in permanent homes—our latest estimate is about

8,000,000. The comparative infrequency of fires and explosions in these 8 million homes is a matter of justifiable pride in our industry, and we are working hard to make the record even better.

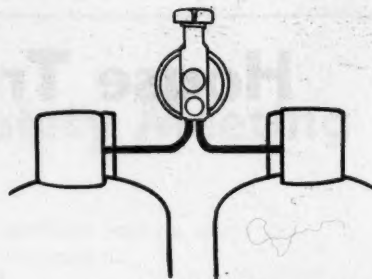
But in house trailers, if we can believe the newspapers, there are approximately four times as many accidents in one-tenth as many installations. By simple arithmetic, that indicates about 40 times as many accidents per thousand customers, compared with installations in permanent homes. Our common sense should tell us that if we can make propane safe in homes that are permanently anchored to the soil, it can be made just as safe in houses built on wheels. And whether we like it or not, the reputation of our product is influenced by the news items published in today's papers. Bad news adds to the sales resistance that we must buck,  
(Continued on page 61)



## Watch These Details To PREVENT Trailer ACCIDENTS



Let's try to get trailerites to use double cylinder installations instead of single cylinders. The chances of accident will not only be less but the customer will enjoy better service.



Appliances with continuous burning pilots should only be used with dual cylinders and automatic changeover valves.



Fuel lines should be fastened securely under the trailer floor about every 2 to 3 ft.

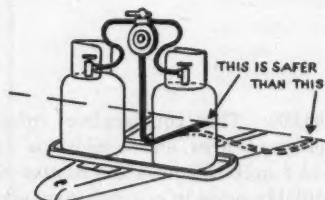


Fuel lines passed through holes in cross members should be shielded in electrician's loom, taped to the tube.

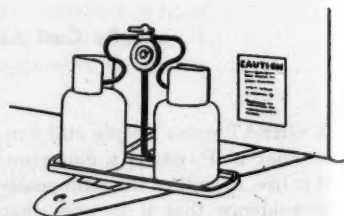
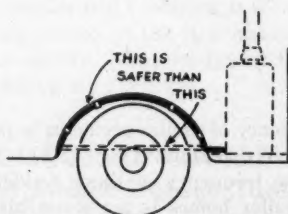


The fuel line should be protected with a rubber grommet where it passes through the floor.

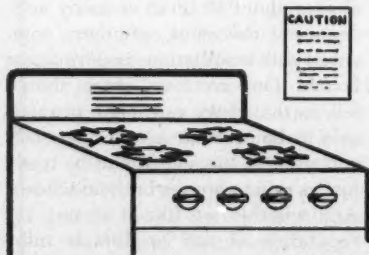
### Support and Protect the Fuel Lines



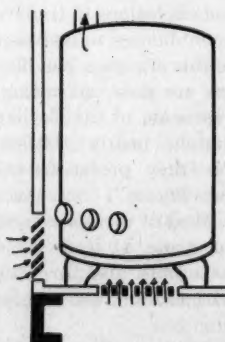
The fuel line should be kept out of the way of flying stones and moving parts. It should be inside the "A" frame, and should be supported, not suspended, if it passes over the axle. An unsupported fuel line presents a serious hazard.



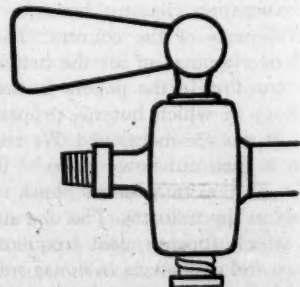
People forget to be safe. Trailerites should be reminded to turn off the appliance valves before opening a refilled cylinder valve.



Valves on appliances should always be carefully checked to see that they are in "shut-off" position before opening a refilled cylinder valve.



Combustion air for water heaters and comfort heaters should come from outside the trailer (through wall or floor), and these appliances should be vented.



No lever type valves should project from appliances or fuel lines. This type of valve invites accidental "turn on."



# FACTS ABOUT THE RED SEAL LP-GAS METER



ACCURATE MEASUREMENT OF LP-GAS

MORE VERSATILE—  
FITS ALL PIPING ARRANGEMENTS

LISTED BY UNDERWRITERS LABORATORIES



COMPLETE WITH ALL ACCESSORIES

SAVES INSTALLATION TIME—  
ELIMINATES EXTRA FITTINGS

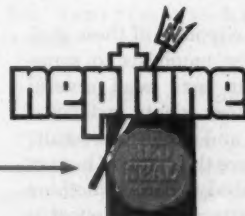
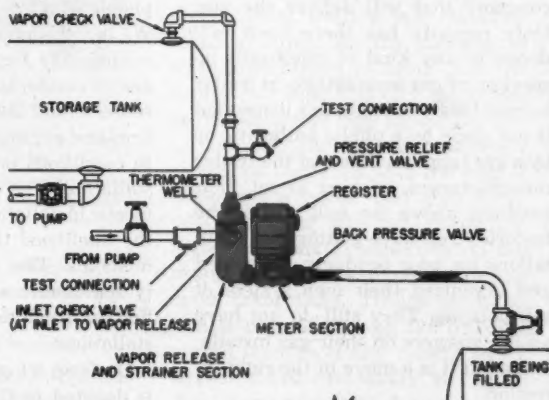
All the time-tested features of the "old reliable" Red Seal are retained in this new "Compact" meter for LP-Gas. Many design improvements now save weight, permit left or right-hand installation in truck compartments, and provide easier access for serving. Plus Underwriters' listing.

The meter and all accessories required for accurate delivery of liquid LP-gas are assembled in one easy-to-install unit. Think of the time and money saved—fewer connections . . . fewer fittings . . . a neater installation in all ways.

The famous Red Seal measuring chamber contains only one moving part, with precision-machined tolerances to minimize frictional wear even with "dry" liquids such as LP-gas. Double case design nullifies effect of pressure changes on accuracy, and eliminates undue wear caused by pressure distortion.

Inlet and outlet connections are 1 1/4". Rate of flow: 30 gpm. max., 5 gpm. min. Choice of two trouble-free registers: The Print-O-Meter which gives your customers the printed tickets they like; or a simple direct-reading register. Ask your nearest Neptune equipment jobber, tank truck manufacturer or branch office for full details.

## RECOMMENDED CLOSED SYSTEM INSTALLATION OF RED SEAL LP-GAS METER



*Accuracy You Can Bank On*

## NEPTUNE METER COMPANY

50 WEST 50th STREET • NEW YORK 20, N. Y. Branch Offices:

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1430 LAKESHORE RD., TORONTO 14, ONT.

MARCH, 1954

95A

57



(Continued from page 55)

and to the cost of insurance which is burdening our entire industry.

Worst of all, these accidents reflect loss of possessions, personal suffering, and in some cases death, most of which could have been avoided had steps been taken soon enough to make the use of propane as safe in trailers as in other installations.

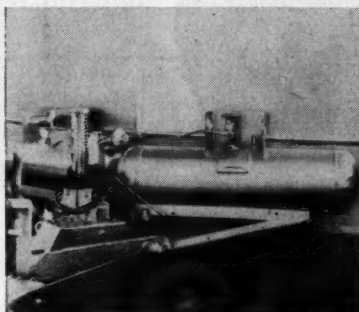
### Why More Fires?

Why are there more fires and explosions in trailer houses than in permanent houses? There are many reasons. One of the main reasons for the difference is that most of the domestic installations were made by people who know the gas business, while most of the trailer installations were made by people who do not know anything about the gas business. And a quick look at the installations in a few dozen trailers of varying ages, including the most recent, will provide convincing proof of the value of training in proper installation practices. Domestic installations are subject to inspection by somebody interested in the welfare of the customer. Sometimes this inspection is "official," by a public agency, and sometimes it is by the boss man of the company that will deliver the gas. Only recently has there been evidence of any kind of intelligent inspection of gas installations in trailer homes. Oddly enough, this inspection is not made by a public authority, or by a gas supplier. A few of the trailer manufacturers, wishing to set their products above the mill run of the factories that were getting bad reputations for poor products, developed and organized their own system of self-policing. They still do not have all the answers on their gas installations, but it is a move in the right direction.

Reading the clippings of these accidents adds new emphasis to something that you have read several times in previous safety articles—that most fires and explosions resulting from LPG are the result of human failure. Somebody did something wrong. The pattern of the report is so often the same—occupant struck a match and the stove exploded—or the oven exploded—or the gas-filled trailer burst into flame. Gas had escaped. How? In a few cases it no doubt came from broken lines. Most of the accidents were the result of

just plain carelessness—leaving an appliance cock open without a fire at the burner. Not always. There are quite a few reports of ladies touching off fires early in the morning while still in their nighties. With clothes aflame, they rush out seeking help, with the amount of burned and uncovered skin increasing at every bound. Under these conditions we would suspect a slow leak instead of an open cock. Otherwise, the newspaper dispatch would have been more likely to report an asphyxiation than a fire.

People who live in trailers are just



**Excellent installation** of twin ASME tanks. This has seen 8 years of service on travel trailer, and is still good.

as human, and probably about the same in average intelligence, as people who live in permanent houses. We can therefore believe that under comparable conditions, the percentage of accidents should be about the same. Could the higher incidence of fires and explosions in trailers be due to conditions prevalent in trailer installations that are not present in domestic installations, and which add to the likelihood that people will make mistakes? That seems like an entirely reasonable assumption. Now let's find out some things about trailer installations.

Division VI of NFPA Pamphlet 58 is devoted to Cylinder Systems For Cooking and Heating Installations on Highway Motor Vehicles. The majority of our states have made this the law, or have adopted laws patterned closely thereon. Enforcement of these laws is something else, and compliance is almost non-existent. (Your editor has browsed among trailer parks in California, Arizona, New Mexico, Texas, and Louisiana, and has not yet found one trailer installation that complied completely with Pamphlet 58). Granted that it is more difficult to devise an effective inspection system for trailers than for per-

manent homes, there is still no excuse for the buck-passing and neglect of commonsense precautions that are evident in these movable homes.

Those are general charges. Let's be specific. Pamphlet 58—and most state laws—state that the fuel line between the regulator and the appliances shall be of seamless drawn copper tubing, at least  $\frac{3}{8}$ -in. diameter; it shall be firmly fastened in a protected location under the vehicle; it shall be outside and below any insulation or false bottom; fastenings shall be such as to prevent abrasion or injury to the tubing from vibration; all parts of the piping system shall be so designed and secured as to preclude such parts working loose during transit.

Recent investigation of nearly 100 new and used house trailers on sales lots in southern California showed the following conditions: Only two trailers had fuel lines supported so harmful vibration could not take place. On one new \$5000 trailer the main fuel line was unsupported for 14 ft. A branch line connected to the main line 5 ft. from the nearest support, crossed the trailer for a distance of nearly 6 ft., and was carried up through the floor with no grommet or protective padding of any kind. We have a report from a source believed to be reliable of one new \$5600 trailer which had 24 ft. of unsupported main line fuel tubing. Nine of the trailers we inspected (all used jobs several years old) were equipped with  $\frac{1}{4}$ -in. fuel lines. Two new jobs of one of the most expensive makes were equipped with false floors—the fuel line was neatly concealed within the enclosed space. On several of the used trailers that had apparently seen much road service, the fuel lines were dangling close to the ground.

### Relief Valve Error

Generally speaking, cylinder mountings complied with the code, whether the installation included one bottle or two. Cylinder valves were almost always of the approved type, but there was an occasional combination which did not include a pressure relief valve. One disturbing tendency, particularly on several makes of new trailers, was the mounting of the cylinders so the pressure relief valves pointed directly at the trailer wall. While we have not found any prohibition of this practice, common

(Continued on page 61)



sense would rule it out. All of the installations in question were made in connection with a certain make of cylinder mount that has many desirable features, and which could just as well have been installed facing the opposite direction, so the pressure relief valves would have pointed away from the trailer.

Pamphlet 58 and the conforming state laws tell us that there should be two warning plates installed on each trailer, one at the "system" and one at the appliance, warning the trailerite to be sure that all appliance valves are closed before opening the shut-off valve at the cylinder. We have never yet seen a trailer that complied with this provision. In a few cases we have found such a plate next to the range, but we have not yet seen one at the cylinder.

### Dangerous Oversight

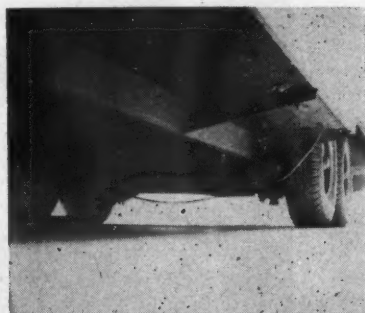
This oversight, combined with the general prevalence of single cylinder installations, is without doubt the greatest single cause of fires and explosions in trailers. The cylinder becomes empty while the appliance is in use—the fire goes out, and without thinking to turn off the appliance valve, the user connects a refilled cylinder to the line, and the cylinder valve is opened. Gas starts to pour out the open appliance valve, while the trailerite goes to the wash house or stops to visit with the neighbors. Later, with a large accumulation of combustible gas loose in the trailer, the owner rushes in, strikes a match, and things go "boom."

Pamphlet 58 also states that all water heaters and space heaters installed in trailers should be (1) vented to the outside; (2) equipped with pilot lights of the 100% safety shut-off type; (3) supplied with combustion air from outside the trailer. There seems to be fair compliance with this recommendation in factory-equipped trailers, but where installations are made by dealers or by the owners, almost anything can be found.

Pamphlet 58 (B.17a) says that all containers holding less than 200 lbs. shall be filled by weight, except containers covered by Div. IV. Not all of the states agree, so we find many trailer cylinders equipped with fixed liquid level gauges. In the states where these are legal, we find many cases where filling is done on the trailer tongue, direct from bulk

trucks. Aside from the questionable accuracy with which a meter can be read in passing such a small quantity of fuel, this method incurs certain disadvantages, particularly in connection with human nature and human weaknesses. Some of the cylinders on some of the trailers are not equipped with these liquid level devices. There is no way of determining when the liquid being pumped into the cylinder reaches the safe liquid level, except by weight. Unfortunately, not every driver has the moral stamina to refuse to fill these cylinders "on the hitch." The result is almost inevitably that the filling continues until the pressure stops the flow of liquid. This is a highly hazardous condition, as a rise in temperature in such an overfilled cylinder is almost certain to result in escape of fuel through the pressure relief valve.

Trailerites who have not yet lost their rolling homes by fires are likely to accept this hazardous condition as of less importance to them than the



Fuel line on used trailer. Unsupported for 14 ft., and drooping within 4 in. of pavement.

exchange of cylinders, which is always a bit of inconvenience, and sometimes a major chore. They simply do not understand the risks.

Generally speaking, the older trailers present much greater risks than the better quality mobile homes produced in the past two or three years, although there is still need for correction of bad installation practices in many makes and models. Inspection of 30 luxury trailers, selling for from \$3500 to \$6800 at the recent Trailer Life Exposition in Los Angeles revealed unsupported fuel lines on almost half of the trailers, mounting so the tubes could chafe in transit on many more, lack of proper protection where fuel line passes through floor on the majority of jobs, and cylinders mounted so the blast from pop-off

valves could strike the trailer walls on about one-fourth. Not one of these trailers was equipped with the warning plates specified in Pamphlet 58. These trailers were manufactured in several states, and compliance seemed to be about equally lacking regardless of source. Some of the states represented have laws either incorporating Pamphlet 58 in their safety codes, or patterned very closely upon that standard. Obviously, the laws are not being enforced when it comes to trailer construction.

Our industry, and the trailer industry, are both suffering from the effects of unfavorable publicity resulting from these too numerous fires and explosions in trailers. There has never been adequate inspection of trailers, whether they are home-made shacks on wheels (generally the most hazardous) or factory produced luxury liners, by the officers charged with the responsibility of seeing that LPG installations in permanent homes comply with the codes. There are reasons and excuses advanced for these omissions—not based on the principle that the law exists to protect the lives and property of the citizens. There is a practical problem involved which needs solution—who should do the inspection and enforcement? Most trailers are manufactured in cities, but the majority of them are shipped to some other localities for sale. The city inspectors do not see where they should be concerned, or their local taxpayers should be burdened with the cost of inspecting a trailer that goes somewhere else for sale and occupancy. State and county inspectors do not ordinarily go into municipalities to make inspections. Trailer construction is not covered by the building permit sections of any codes that we have heard of. And finally, all inspection departments have budget trouble.

### Complex Situation

Trailers move from place to place with almost no restrictions. They can generally cross state lines without having anyone ask whether they comply with the laws of the states that they enter. What is legal in one state may be out of order in the next state. The situation is so complex that little has been undertaken, from the official standpoint, to bring the safety standards up to the same level that is



required in connection with permanent dwellings. Yet the need for official enforcement of safety regulations is the same, and the people who live in trailers are just as human, and almost as likely to be citizens and voters, as people whose homes are on permanent foundations. Admittedly the problem is complex—and while we do nothing about it, it is getting greater in magnitude by nearly 100,000 per year. Let's start looking for a practical solution to this problem. Who would be interested in correcting the bad situation? Obviously, the people who are being affected financially—the trailer manufacturers who find sales resistance because people develop fear of living in trailers, the trailer park operators who fear adverse publicity as the result of fires and explosions on their premises, and the liquefied petroleum gas industry, which takes the lion's share of the blame when things go wrong.

Let's take a look at what needs to be done, and see what each group is in position to do about it.

### The Missing Ingredient

The problem is really no different than we have always faced with domestic installations in permanent homes—get the complete installations structurally and functionally safe, and then teach the owners to use them safely. The missing ingredient is that our industry does not make the trailer fuel installation in the mobile home—does not meet and talk to the owner before service begins—in many cases never sees the trailer or its fuel installation. And there is little help available from the public safety inspectors, under the present set-up.

In the manufactured trailers, which are now at least 99% of the output, the appliances and fuel systems are built in at the factories. Since the majority of our states have laws following closely after Pamphlet 58, presumably the manufacturers should have followed the rules. We know that in the past this was just a pleasant fiction. But now we see evidence that some of the leading trailer manufacturers realize that they must clean their own houses, in this as well as in other aspects of construction. There is now a "Certified Construction" program, sponsored by the Trailer Coach Association, and participated in volun-

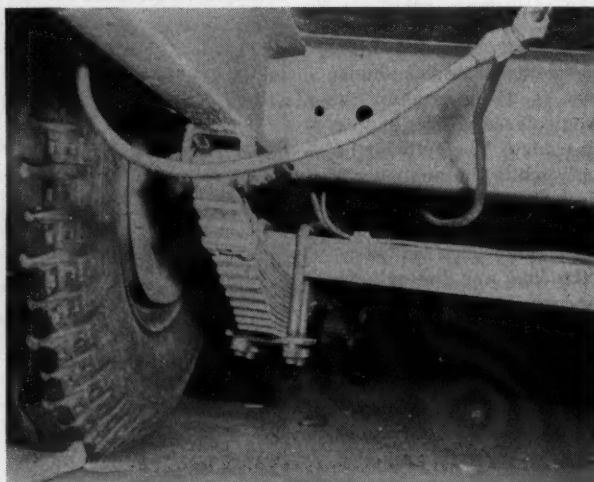
tarily by a sizeable group of responsible manufacturers. This is a voluntary program of self-policing, and they are aiming at a high standard. But not all of the important manufacturers are in the program, and judging from the bad practices noted at the National Trailer Life Show (Los Angeles, Jan. 22-27, 1954) it is not yet 100% effective with the participating companies. If properly handled, this program could become the means of making safe installations in new trailers the general rule. But it can not affect the 800,000 trailers that are already in service. Those are beyond the reach of the manufacturers, and must be taken care of by someone else.

The next possible point of control is the trailer park. There are thousands of these parks, and the major-

a means of accomplishing that end. The inspection and upgrading of all the sub-standard installations must still be done by someone who knows the gas business.

### Laws Are On Books

That's where we come in. In most states, the basic law that will get this thing under control is already on the books. All we need is effective means of enforcement. We could go to the departments or commissions responsible for the enforcement of the act, and try to get something done. We might possibly put on enough heat to get a program of official inspection under way. What then? Who corrects the things that are found to be wrong? Who sees that the corrections are made? Wouldn't it be more practical to have service men from our



Unsupported fuel lines on new 45 ft. super-trailer. Main line crosses axle housing with no protection against impact of axles.

ity, but not all of the residential, as contrasted with the travel or vacation type of trailers, are located in these places more or less permanently. Unfortunately, some of the trailers offering the biggest risks are parked in back yards, but the high percentage of trailers that are in regular use as homes are concentrated in the parks. Does that mean that the park operators would be willing or capable of making a competent inspection of the fuel equipment in the trailers? They would probably like to have it done, but it is doubtful if they would want to do it, much less go to the trouble of learning what to do. We can probably consider the trailer park as a place where inspection and control could be done—not

own industry deputized to carry out an inspection and correction program ordered by the safety officials of the several states? Since this situation so urgently needs correction, wouldn't this be an appropriate project for the legislative committee of your state association?

The above suggestion has been advanced by several interested dealers. Various means of making the inspection service practical have been proposed, including the charging of a flat fee of \$2.00 for inspection and certification, plus a reasonable charge for time and materials required to bring each installation up to the standards laid down in Pamphlet 58 and any additional requirements

(Continued on page 64)



# Provide continuous gas service for all heating, drying and stand-by applications

Install MITCHELL Vaporizers on customers' LP gas systems and you can be sure of their satisfaction with continuous gas service uninterrupted by freeze-ups due to temporary overloads or sudden, heavy withdrawals.

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*DIRECT FIRED*

## Vaporizers



### AUTOMATIC SELECTIVE CONTROL

Connected to storage tank with both liquid and vapor lines, the Mitchell Vaporizer is designed for Automatic Selective Control. This patented feature automatically allows vaporizer to supply either generated gas, or storage gas . . . or both at the same time . . . in response to the demand.

### SIMPLE INSTALLATION

Complete instruction sheets for installation are packed with every vaporizer. Model 30 is ordinarily mounted on steel support stand; Model 70 is mounted on concrete block. Simplicity of design is foremost with Mitchell Vaporizers. Properly installed, they will give long years of constant, trouble-free gas service.



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**MODEL 30** — Capacity: 30 gallons per hour. For small and medium size demands. Model 70 (not illustrated) for demands up to 70 gallons per hour.

*Write today...*

## JOHN E. MITCHELL COMPANY

3800 Commerce Street DALLAS, TEXAS

*Manufacturers of Fine Machinery for Half a Century*



Send for  
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booklet on  
MITCHELL  
Vaporizers

**John E. Mitchell Company**  
3800 Commerce St.  
Dallas, Texas

Gentlemen:

Please send FREE booklet on MITCHELL Vaporizers which describes their use and installation.

Name

Address

City  State





**Fuel system** on new \$6000 trailer. Cylinder holder should be mounted the other way around, to direct pressure relief valves away from trailer wall, and put fuel tubes in protected location.

called for by the laws or regulations of the state in which the work is done. Those who made the suggestions point out that having the work done on this basis would clean the job up on one visit, whereas handling it through the regular state inspectors would involve (1) preliminary inspection to determine work required; (2) completion of the corrective work by a competent gas man; (3) re-inspection to provide the trailer owner with a certificate.

There are several precedents for campaigns of this kind. We are all familiar with the state highway patrol drives to bring brakes and headlights up to reasonable standards of safety, wherein car owners with defective brakes and lights are issued citations which are cancelled upon presentation of a certificate showing that the work has been done.

### **This Is Your Problem**

There is also need for safer and more convenient practices in supplying trailer owners with fuel. The suggestion made by Jack Kneass in his article beginning on page 56 of the November, 1953, BUTANE-PROPANE News is worthy of serious consideration. A cabinet at the trailer park, filled with exchange cylinders, offers many advantages over delivery

by bulk truck, and makes it possible to comply with all safety recommendations in Pamphlet 58.

We believe this method would be more profitable to the L. P. gas distributor, as well as more convenient for the trailer owner. There is one obvious problem. Each customer owns his own cylinder or cylinders. Many of them are painted to match the trailers, and the owners are proud of the appearance of their mobile homes. They might object at first to an exchange deal, but if the refilled cylinders were all kept neatly repainted with aluminum, the appearance on a trailer of any color would be neat and attractive. Presumably the convenience and safety would go far toward overcoming any objections to exchanging cylinders. There is no question but that refilling the cylinders at the bulk plant, and transporting them to and from the trailer courts in quantity, would be more economical for the LPG distributor than either filling at the court from a bulk truck, or than filling individual cylinders on a cash and carry basis as they are brought to the plant by the owners. The arrangement would also be worked out to provide a profit for the trailer court.

The present accident frequency in house trailers is a serious problem in both the L. P. gas and the trailer industries. It should be gotten under

control as completely and quickly as possible. With 100,000 new trailers planned for the market in 1954, it can get worse fast unless corrective measures are taken at once. BUTANE-PROPANE News does not claim to know all the answers, but we believe that focusing the attention of several thousand safety minded members of the industry on the problem will lead to the answers. We feel that it is our duty to provide the information facilities that are needed to work out satisfactory corrective measures, and we request particularly that every distributor using our Safety Program should discuss these various phases of the problem in their company meetings, and write us any worthwhile suggestions that may come out of the discussions. We will present more articles on this subject as the information becomes available. The situation will not cure itself—it requires positive leadership and action, which we feel must come from the liquefied petroleum gas industry.

The problem is one that poses a challenge for every person in the industry—a challenge to stamp out these dangerous and unsafe practices which not only cause a loss of life and property, but which continuously provide material for the newspaper headlines that give a black eye to the entire LPG industry.



**Cylinder exchange cabinet** provides quick and convenient service for trailerites and small domestic consumers. It is used in some trailer parks.





# HOW SUBURBAN GAS SERVICE, INC. BRINGS CITY-TYPE SERVICE TO 17,000 CUSTOMERS

Suburban Gas Service, Inc. is one of the largest LP-Gas companies in the West, with over twenty bulk plants extending from San Francisco to Yuma. American LP-Gas Meters are an essential part of the Company's "Metergas" Service.

The "Metergas" system gives the suburban and rural homeowner all the convenience of "city-type" gas service. It is the most efficient and economical method of fuel distribution.

Suburban Gas Service, Inc. states, "Fuel storage in tanks of sufficient size, on the customers' premises, minimizes delivery problems and makes possible a better load balance throughout the year."

★ ★ ★

Write today for your free "Guide to LP-Gas Metered Service"—American Meter Company's new booklet designed to help solve your LP-Gas distribution problems.



The "Metergas" customer simply reads the meter, marks the postage-paid card furnished by Suburban and mails the card to the Company. The gas consumed is invoiced monthly. Suburban thoroughly checks and maintains the system, assuring complete customer confidence.

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Hamilton • Edmonton • Calgary



# Problems for Discussion at Fourteenth Safety Meeting

This meeting assignment is in a different category than has been undertaken at previous meetings of this series. It outlines a problem on which we do not have satisfactory answers, but for which our industry needs a practical working program **RIGHT NOW**.

While corrective measures and enforcement must be applied at the local level, the interstate nature of the problem requires coordination on a national scale. We need a national program to straighten out this mess. Development of a satisfactory program applicable to every state requires knowledge of the conditions existing in every locality, the status of regulatory legislation in every state and major local area in which house trailers are concentrated, an appraisal of the effectiveness of enforcement and the practical problems limiting enforcement, and finally the development of a satisfactory combination of legislation and a practical means of enforcement.

Our industry has a job to do in self defense, and as pointed out in this month's Safety Article, it is rapidly becoming more difficult as the number of trailers multiplies.

In working out the answers to the following questions, you will not only derive valuable material for your own guidance, but will also be able to contribute valuable data and suggestions which may be useful in working out a national program. If every participant in this Safety Training Program will send a memorandum of your findings and recommendations to BUTANE-PROPANE News, the accumulated data should be too impressive to be ignored. We will then be in position to work, both directly and through the state and national associations, to secure the necessary corrective measures with the least possible loss of time. These are the questions that need to be answered:

---

## Problem 1

Do your state, county, and municipal jurisdictions now have laws or legally established regulations patterned closely after Pamphlet 58, governing the installation of fuel systems, equipment, and appliances in house trailers and mobile homes?

## Problem 2

Are such regulations enforced? If not, what reasons are given by the responsible agencies for lack of enforcement?

## Problem 3

What means can you suggest for educating the trailer residents in the safe handling and use of propane?

## Problem 4

Can you suggest any changes in the regulations which you believe would secure better compliance and result in lessened hazard of fire and explosion in house trailers?

## Problem 5

What methods of supplying propane for trailerites are in common use in your community?

## Problem 6

Can you suggest a means which you believe would be safer and more satisfactory, based on your company's experience in the safe filling and handling of cylinders used in permanent dwellings?

## Problem 7

Can you suggest any changes which you believe would result in improved compliance with and enforcement of the existing regulations? How can the 800,000 existing trailers be brought up to standard?

## Problem 8

Will you summarize your findings and opinions on these questions into a written memorandum, and mail a copy to Gene Masters, Research Department, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.?

**SEE PAGE 142 FOR ANSWERS TO LAST MONTH'S SAFETY PROBLEMS**





*right on schedule*

Sid Richardson Gasoline Company brings deliveries to you when desired, just as the chuck-wagon follows and serves the cowhands during round-up time.

Our aim is to make deliveries of highest quality LP-Gas to you right on schedule, at the time and place you specify and in the exact quantities required. To do this we plan carefully and cooperate fully with our customers.

We are able to give you unsurpassed service, since we have no company-owned wholesale or retail outlets competing with you on our shipment schedules.

Contact us now for complete information. Let us show you how our products and service will save you money.

**Sid Richardson**  
GASOLINE CO.  
629 FORT WORTH CLUB BUILDING • FORT WORTH, TEXAS



## ... again without fail

Through the months of heavy demand of **four consecutive winters** the customers of Sid Richardson Gasoline Co. regularly received their contract requirements of top quality LP-Gas. We delivered every year **RIGHT ON SCHEDULE**, as promised in the above advertisement first published in October 1950.

We invite you to become a regular customer and enjoy our unfailing deliveries and co-operation. We have no company-owned wholesale or retail outlets to divert our interest away from you. Our No. 1 responsibility is to see that our regular customers are supplied with top quality LP-Gas at a favorable price.

**Sid Richardson**  
GASOLINE CO.

629 FORT WORTH CLUB BUILDING • FORT WORTH, TEXAS



# Time For A Change

## In Selling Attitudes

*The day of sitting at the desk and waiting for the order is over.*

By M. A. Ennis



LET us face facts and admit\* that there are many economic conditions existing that we, as retailers, do not wish to see changed. One condition existing, which I am sure none of us want changed, is the fact that you are currently surrounded by prospects, in all directions, that (1) have the *ability to buy* your products and services, (2) have the *need* for your products and services, and (3) have the *desire* for your products and services.

If you do *not* want this condition to change, then you, as *retailers* and *salesmen*, must make some changes

in your *methods*, your *policies*, and your *techniques*.

If we will but take a quick look at our economy, we will at once see that "Nothing happens till somebody sells something." In other words, if we wish to keep our economy at the current high level, the full responsibility lies with you, and others like you, throughout the country. You, the salesmen of America, must move the manufactured goods from the factory into the consumer's homes in a greater volume than ever before in the history of our country.

It's the old, but well-known fact, that unless "goods" are consumed, the production workers cannot be employed. If they are not employed and earning wages, they, in turn, cannot buy "goods." This economic fact, affects all of us, regardless of the industry we are associated with.

In other words, if you want to see to it that our economy remains at a high level as it is, that the factories remain in production, that the wage earners continue to receive wages, so that they can continue to buy

"goods," you then must assume an obligation to do your part as *salesmen* and sell goods in a greater volume than ever before.

Again, I repeat—"Nothing happens until somebody sells something."

If you feel that you want to take part in selling a continued prosperity, continued acceptance of L. P. gas, a continued high level of employment, and a continued economy, where you are surrounded by prospects with the desire, the need, and the ability to buy your products and services, then it is "*time for a change*." It is time for you to make some changes.

Perhaps, we should admit that it is time for all of us to do "*more of the things we know*" are necessary, in order to make sales."

Those of us in the gas industry have been self-satisfied. In recent years, we were either not ready, or unwilling, to fight for our position in the market place.

*\*Presented at the Mountain States District Convention of the LPGA recently held in Troutdale-in-the-Pines, Colorado.*

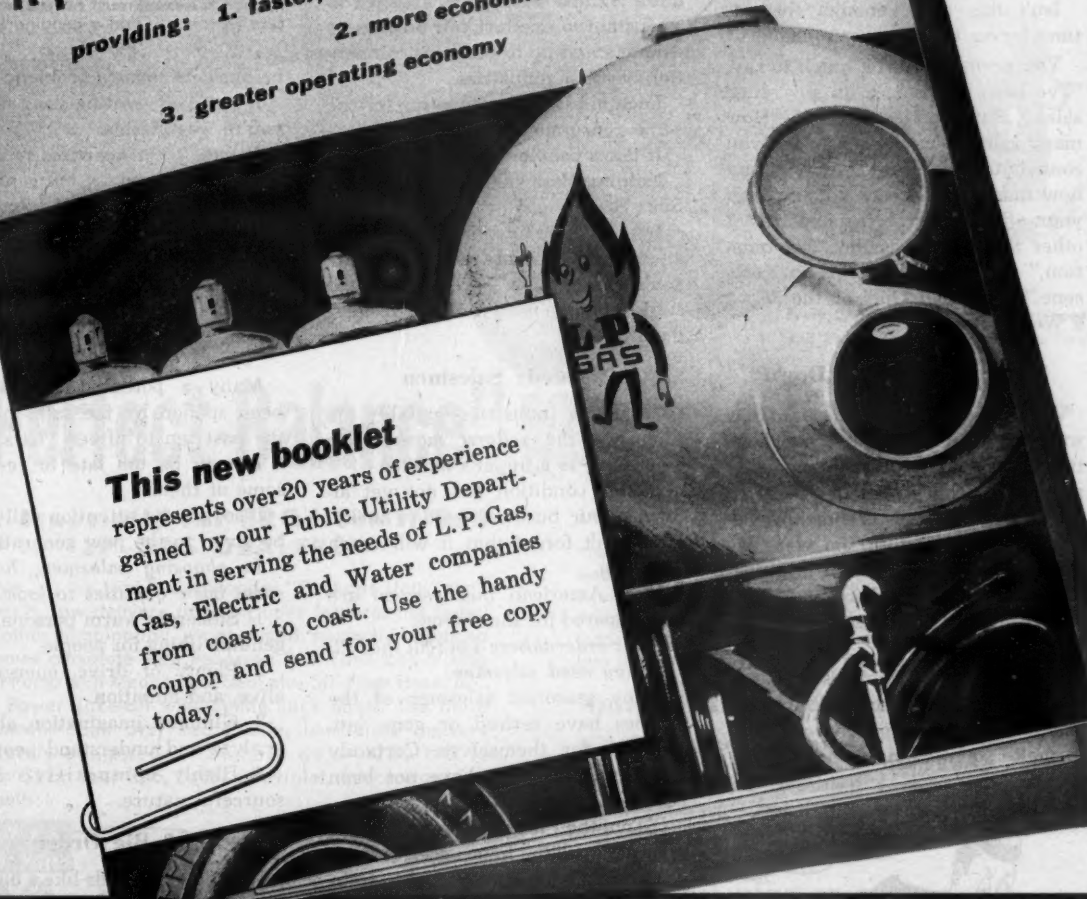


M. A. (Mel) Ennis, currently West Coast Secretary of the National LPGA, was formerly Training Director for the National Committee for LP-Gas Promotion.



**Remington Rand** presents:  
**A proved system for L.P. Gas Companies**

- providing: 1. faster, factual customer service  
2. more economical truck routing  
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**This new booklet**  
represents over 20 years of experience  
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**Remington Rand**



Before the last war, at least 3 gas ranges were sold for each electric range. Now that ratio is only 2 to 1. This decline in ratio hurts. It seems that as we view this condition taking place, that either we do not have the will to sell, or that our policies and sales methods do not meet today's market requirements.

As a further evidence, or our lack in maintaining our sales position, refer to the Census of Housing, which shows that in 1940, 1.8 million dwellings used an electric range. In 1950 there were 6.3 million, or an increase of from 5.4% of the dwelling to 15%.

Isn't this proof enough that its time for us to make some changes?

You perhaps will be quick to say, "I've been doing o. k. on gas range sales." But, let me ask you—"How many sales in recent years can you contribute to "scare buying" and how many have been, not, through your efforts, but at the expense of other types, such as the "Combination," the "Bungalow," the "Kerosene," the "Fuel Oil," or the "Coal & Wood" range?

### Water Heater Sales Down

Water heaters are another item that warrants your immediate consideration insofar as your merchandising program is concerned. It is easy to see that this market is somehow being neglected. Before the war, gas water heater sales were leading electric water heater sales by at least 4 to 1—now gas only leads by about 2½ to 1.

I show these examples only as proof of the seriousness of our sales position. To show proof that we need to make some changes in our mer-



It's going to take a lot more "get up and go" if you want to stay ahead of your competitor.

chandising program, our advertising programs, our sales methods and, most of all, our need for hiring and training of new and more salesmen.

The LPG business is not a short term business. It is a business that requires a large capital investment.

The growth and development of this industry will be, now more than ever, in direct proportion to what is invested—and by investment, I mean not only capital, but time, advertising, sales promotion, market research, cost accounting, long range planning, etc.

Bear in mind, however, that without a trained sales force, engaged in a constant sales effort, our businesses cannot stand up to the sales competition of other industries.

Each industry is competing for the same consumer dollar!

It takes people to sell people!

Nothing Happens Until Somebody Sells Something!

Let me quote to you, for a moment, an observation made recently in Babson's Washington Forecast—on the subject of "the need for trained salesmen."

### Wanted: Salesmen

"In many industries—notably appliances—the sellers' market has given way to a buyer's market.

If this condition has not yet affected your business—you're lucky. But, don't forget that it will reach you soon.

Most American businessmen are not prepared for the change.

*Their order-takers don't fill the bill. . . they need salesmen.*

Many seasoned salesmen of the thirties have retired or gone into business for themselves. Certainly their superb talents have not been required in the past few years.

It's not their fault. They didn't have to sell. You didn't have to select them as sellers. There was no need to train them.

### Meeting the Problem

*Now, there's no time to lose.*

Present sales staffs should be put under the microscope. The chaff should be separated from the wheat.

*Problem number one is your sales manager. He should be dynamic, inspire confidence, and personify success.*

*He should be your ace salesman.*

Under him, each staff man should be re-analyzed to determine whether



A good salesman must have a warm, sincere personality and a genuine liking for people.

he answers today's problem.

If not, he's wasting your time and you're wasting his.

*It may seem heartless to reassign or discharge him . . . but chances are that some day he'll thank you for your decision.*

*There's no more unhappy creature on earth than a non-salesman trying to sell.*

### What to Look For

Many a potential salesman has been spoiled by the sales habits of the past ten to fifteen years.

It may be too late to re-educate some of them.

If so, greater attention will have to be given to the new generation.

*In choosing salesmen, here are some basic qualities to look for:*

1. Sincerely warm personality . . . genuine liking for people.
2. Plenty of drive, energy, initiative, and ambition.
3. Glibness, imagination, ability to analyze and understand people.
4. Highly competitive and resourceful nature.

### A Big Order

We know it sounds like a big order.

But the big reward will go to the businessman who finds such men or trains qualified individuals along those lines.

*Your method of paying salesmen should also come under careful scrutiny.*

For many years, the tendency has been toward straight salaries rather than commissions or draws. With order-takers, that was sensible.

Now, *incentive selling* is better for you . . . and better for any man qualified to call himself a salesman.



# You Can Cut LPG Delivery Costs



We Are  
Authorized Truck Distributors

Every Unit Priced Completely Equipped  
and Ready to Go... Excise Tax Paid

## With this "Perfect-Balance" Nor-Tex Payloader

### Built Especially for PROFIT-MINDED LP-GAS DEALERS

For value... the Nor-Tex Payloader "Package Unit" can't be beat! Its low delivery price includes features not found in any other combination. It's plumbed, perfectly balanced and comes complete with Recessed Fuel Tank and Viking KK 190 Pump with Mechanical Seal plus 50' Filler Hose, ICC Lights, Power Take-off with Spline Jack Shaft. The finish is Aluminum Paint over Red Oxide. Immediate delivery (completely equipped — ready to go — 1250 WG to 1800 WG) on new Reo, Ford, Chevrolet, International or GMC units.

Write, Wire or  
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**Balance Your  
Load the  
Nor-Tex Way**

**+  
Finance the  
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Manufacturers of Fine LPG Equipment

# NORTH TEXAS TANK CO.

P. O. BOX 1219

DENTON, TEXAS

CENTRAL 5416

### LOWER OPERATING COST

"Perfect Balance" and elimination of unnecessary bulk means lower fuel cost, greater tire mileage, less chassis strain and less engine wear. Nor-Tex Truck Tank users are piling up impressive records in economy, profitable pay loads and low cost maintenance. Nor-Tex Tank safety margins are far in excess of code requirements.

### HIGHER EARNING ABILITY

With this Nor-Tex "Package Unit" you can load, deliver and dispense LP-Gas faster than ever before. Note the EXTRA room... the convenient arrangement of fittings, valves and gauges that enable you to deliver more gas with less effort. Exclusive piping permits full flow transfer into or out of tank.

### LOWER DELIVERY PRICE

There's no danger of wasting money on "too much truck" or sacrificing efficiency with "too little truck" for your needs here! The Nor-Tex Payloader is factory matched to the job! Skillful engineering has made possible this beautiful, light weight unit. Its lower, competitive price demands investigation!





Real salesmen want it that way.  
It's their only chance to make selling the business it should be . . . the most lucrative profession in the world."

Certainly this forecast should be proof enough to you, if it hasn't already been proven to you, by your present sales reports—that it's . . . "time for a change."

We, of the Training Committee, recently released for use in the L. P. gas industry, a sales training course. This material was in preparation nearly a year. It is the combined

thinking of not only industry people, but also that of educators, who have made studies of the subject, from both the standpoint of theory, and practice alike.

Based on information found in just a small part of one unit of this training course, let me review with you, some of the phases of this business of selling that can be of value to you and your sales organization if studied and applied.

Let's, therefore, talk a little about selling in general, but first, some fundamentals.

A business transaction almost always means an exchange between two parties, the seller and the buyer. No business can enjoy continued success without a *mutual exchange-of-use values* between these two. Many people have the impression that in order to show a profit in business they must receive more than they give. *This is not true.* Real profit is the result of converting one's energies into benefits.

The customer spends time, energy and money in making a purchase. The salesman and his firm spend time, energy and money in making a sale.

The buyer uses his money to obtain certain benefits.

The seller puts his time and energy to work in order to procure money which he will use later to gain other desired benefits when he becomes a buyer.

Some businesses fail—let's look at a few of the reasons.

If a product or service is of no use to a customer, or if the customer's medium of exchange is of no use to the salesman or his firm, there can be no mutual exchange of use values.

An organization or individual who tries to receive *more* than he gives, soon finds that the ladder on which he would climb to steady profits is forever tottering because the base it stands on is weak and insecure. The result of such a business policy sooner or later is failure.

On the other hand, if business pays so little attention to the laws of economics and sound credit standing that it gives more than it receives, its stability will be likewise threatened. Here, too, continuance of such a policy leads to failure. Business failures are accompanied by an economic loss to the community.

A happy medium between these two extremes is an essential policy for any firm which plans to be of the greatest usefulness to itself and to its customers. Its growth and prosperity are determined by the degree of its usefulness to society.

There are really only 3 types of sales. These three types of business transactions which involve the transfer of goods are: (1) purchasing, (2) order-taking and (3) selling. Understanding the difference between them will be helpful in perceiving the relationship between a salesman and a sale.

1. *Purchasing*—A purchase can be

## Available Soon!



Have You  
Checked on The  
**NEW VIKING**  
GG196 FUELING  
UNIT?

A complete, compact pumping unit built for all types of LP-gas fueling jobs.

Tractors, buses, taxicabs, trucks and cars are quickly refueled with this direct connected Viking LP-gas pump. A repulsion induction, 1750 RPM motor is standard equipment. Unit delivers 10 GPM and is built for differential pressures up to 60 PSI.

Simple, mechanical seal, non-lubricated inner bearing, radial thrust bearing on pump shaft, by pass valve on head equipped for return line to tank, and safety relief valve on suction port are other outstanding features.

See the Complete Viking LP-Gas pump line at Booth 176,  
National L.P.G.A. Convention, Conrad Hilton Hotel  
Chicago, May 9, 10, 11, and 12, 1954.



Send today for  
complete information  
and prices. Ask for  
bulletin A2300B.



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STORAGE TANKS  
LPG, Anhydrous Ammonia  
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EXPANDED LINEPIPE  
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ANHYDROUS AMMONIA SYSTEMS

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made by one person. It takes two to make a sale.

Human vending machines perform a similar service of exchange. They stand guard over goods which are on open display. They do not make sales, but they receive money and wrap the package when a purchase is made. They may even quote prices, but the purchaser does all the thinking and selecting.

2. *Order Taking*—Order-takers are a step nearer to salespeople. They must be able to understand instruc-

tions and to select goods which will meet the requirements indicated by the purchaser. He does not have to interpret needs or evaluate the possibilities of filling them. He merely selects from stock and leaves the rest of the thinking to the customer.

3. *Selling*—A sale is the agreement involved in the exchange of goods or services for money or some other consideration. Salesmen interpret the needs of customers, select goods which will fill those needs as nearly as possible and then teach the value

of these goods to the customer, so that satisfaction will result. The customer agrees that the price of the merchandise is equal to the benefits to be derived from it. It is the salesman's job to bring about this agreement. It is his responsibility to bring together the various factors in a sale and to make certain they have the proper relationship to one another.

There are two types of salesman: One is the high-pressure type. He promises anything that will get the customer to sign a contract or pay for benefits he expects to receive. He does not build business. He arouses desire or fear to make a sale regardless of customer satisfaction.

The other is the creative salesman because he creates sales. He either creates a demand for his product or furnishes a product which will fill a demand and gets recognition of that fact, in the minds of his customers.

He, too, arouses emotions to get action, but does so by teaching the values of his merchandise. He does not resort to tricks or pressures to force people to act contrary to their best judgment. He builds business profits by the customers he keeps.

#### **Must Understand People**

A successful salesman must understand people, be able to interpret their moods, ferret out their desires and their needs. He must be able to place himself on the intellectual and emotional plane of his prospects so that he can talk to them from their viewpoint. He must also use illustrations taken from their experiences so they can better understand what he has to say. Some salesmen use these methods more or less automatically, but most of us have to learn to do so.

There are a few basic steps in any sale. Every experienced salesman knows that, first of all, he must obtain and maintain the prospect's confidence in himself and his product.

(A) He must make a favorable impression:

After determining the type of customer whom your products can serve, and anticipating some of the problems which may be encountered in getting acceptance of the products' value, the salesman is ready to approach his prospect.

A wide-awake salesman arranges to make a very favorable impression upon his prospect. He makes certain that his appearance and manners are



## **Butane Propane**



When you buy LP-Gas from Carter, you have the assurance of high quality and dependable service. Years of experience in producing and marketing LPG make Carter an unexcelled supplier.

**THE CARTER OIL COMPANY**  
**TULSA, OKLAHOMA**



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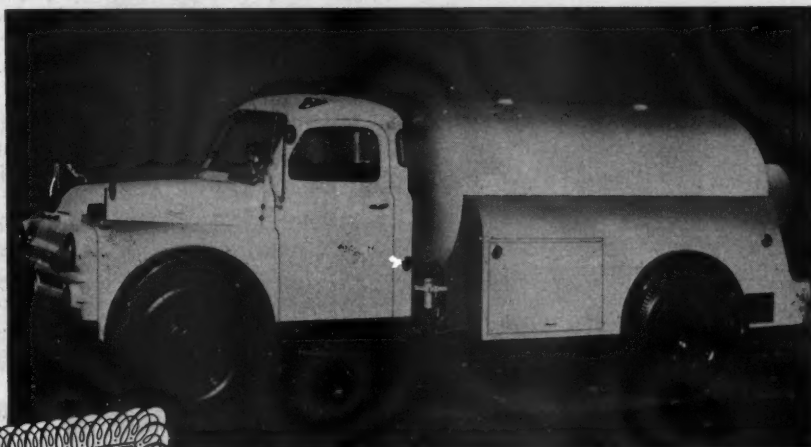
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Truck Tanks for LP Gas

*Maximum Safety*  
*Economical Operation*  
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to be in safe operating condition when the tanks leave our plant. Designed to give complete customer satisfaction.

**CERTIFIED**

to meet exacting requirements of ASME Code and ICC Specification MC-330. Charlotte Truck Tanks are load-balanced to the chassis.

*Write today for full information and prices on our line of Engineered Truck Tanks, D-Hydrated LP Gas Systems, ASME Cylinders, Duo-Tested Anhydrous Ammonia Tanks.*

Charlotte Engineered Truck Tanks are furnished to fit your present truck or on a new chassis of your choice.

All wiring is sparkproof — all excess flow check and hand valves are of the highest quality.

And, in addition, twenty-nine quality construction features assure you of maximum safety, economical operation and many years of rugged service.

Charlotte Engineered Truck Tanks are available in 1248 to 2400 gallon water capacities.



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CHARLOTTE 8, NORTH CAROLINA



pleasing. He also makes sure that his product is well displayed, or that his manual is well illustrated.

Next, he carefully checks the tone of his voice and his inflection so that they will not fail to create the desired effect. With these things well in mind, he gives special attention to what he says—not only to the selection of the ideas to be conveyed, but also to the choice of words to express them.

But much *more* than a favorable contact is necessary if a *sale* is to result. The contact now *established*,

must be put upon a permanent basis.

(B) Views must be united:

Make every effort to adapt yourself to the prospect's mental and economic viewpoint. Thus only can you be certain of conveying important facts to the mind of the prospect. Avoid using words which she cannot readily understand, or having her feel that she is dealing with her inferior. Either impression limits the force of your presentation.

Consider the prospect's general attitude toward your product or serv-

ice. A prospect prejudiced against it must be handled differently from one who is neutral or favorably inclined toward it.

Careful observation of a prospect, her habits of dress, condition of the home, and type of home furnishings can provide valuable information regarding the prospect's probable interests; they help you decide which features of your product should be presented in detail.

(C) Needs and desires, must be ascertained:

A salesman learns what a prospect really wants by (1) suggesting an article and then watching her reaction to the suggestion, or (2) by examining the equipment now being used in her home and inquiring into its serviceability and its drawbacks, or (3) by questioning the prospect as to her needs and desires.

Close attention to the prospect's reactions will guide the salesman into a presentation of the article best suited to satisfy; into a presentation of points which will interest her and which stimulate her desire for ownership so that the closing of the sale may be attempted with greater likelihood of success.

#### Arouse Prospect's Interest

The problem of selling becomes one of doing a sufficiently good job of arousing the prospect's interest to warrant spending her money for the salesman's products or services. Some salesmen have made the error of directing a prospect's attention to sales features which his product thereupon could not meet.

(D) Interest must be developed:

Talk about the problems which primarily interest your prospect, and then show how your product will be advantageous to her. She responds better to the language of *solving her problems* than that of paying out additional money.

(E) Turn on enthusiasm:

Indifference generates indifference. But, a prospect who is exposed to a salesman's enthusiasm is very apt to catch the emotion, in spite of previous lukewarm interest in his product.

The only sure way for a salesman to generate enthusiasm within himself is for him to know his product or service thoroughly and to fully appreciate the real benefits which his product can give its users. No salesman can hope to achieve success in



### See You in Chicago May 9-12!

Make plans today to attend the big 1954 LPGCA Convention and Trade Show at Chicago's Conrad Hilton Hotel. Record exhibit of latest LP-Gas appliances and equipment . . . open forums and speeches by national leaders on current industry problems and prospects. Plenty of entertainment . . . banquet and variety show . . . special events for the ladies. Members and non-members cordially invited.

Make room reservation with Hilton or hotel of your choice.

## LIQUEFIED PETROLEUM GAS ASSOCIATION

11 S. LaSalle Street

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# Rheem Coppermatic®!

**Unique Design Pure Copper Tank Water Heater  
Immediate Top Seller Wherever Introduced**



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### RUST-PROOF Rheem Coppermatic AUTOMATIC STORAGE WATER HEATER



#### COMPLETE PURE COPPER TANK

—for long life!  
Rust-proof, corrosion-  
resistant. Built for  
long years of  
efficient service.



#### INSIDE A COMPLETE STEEL TANK

—for maximum strength.  
Both tanks have super-strong  
capsule shapes—Pressure-  
Proved at more than twice the  
normal household pressure!



**LOW OPERATING COST**—A new, high-efficient burner directly heats the domed tank bottom. An ingenious flue channels heat around the upper tank surface for faster heating at lower cost.

## 2. A PROVED PROFIT-MAKER!

Wherever Rheem has introduced Coppermatic, sales have been sensational! And with Rheem's liberal trade mark up, dealers are cashing-in on the big profits! Coppermatic can be sold for as little as \$1.40 a week after a small down payment and installation charges. It's a *real* money-maker—so don't lose out.

## 4. BACKED BY NATIONAL ADVERTISING AND PROMOTION

Big, powerful, hard-selling ads in sales-building magazines like Life, The Saturday Evening Post, Good Housekeeping, Better Homes and Gardens, American Home, House Beautiful, House Beautiful's Maintenance and Building Manual, House and Garden Book of Building and Small Homes Guide. Dramatic store displays and sales promotion material help you sell.

You can rely on



## 3. THAT KEEPS CUSTOMERS HAPPY!

With Rheem Coppermatic home owners enjoy an almost continuous flow of hot water. The Coppermatic heats a new supply of water almost as quickly as you can use it. Coppermatic lasts years longer, eliminates complaints, sells for little more than an ordinary water heater!

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Send your request to nearest sales office, addresses of which are listed at left.

Please send me complete facts about Rheem Coppermatic profits, advertising and promotion.

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ADDRESS .....

CITY.....STATE.....



his profession without enthusiasm for salesmanship, for his industry, for his company and its policies and for his product and for his customers, both present and potential.

(F) Teach values:

Information about a product must be presented in a manner which will actually teach the value of its various features to the purchaser. These values must represent specific benefits which will be obtained from owning and using the article, and they must be described in words which

have definite meaning to the prospect.

The buying public often thinks that all water heaters function alike because they look alike. The same inference is often made concerning furnaces, ranges, refrigerators and other equipment. Salesmen must remember that if prospects did not need to be taught the value of different features and the benefits to be derived from their use; if they already know enough about them to decide which they should have, *there would*

be no need for salesmen. Order-takers could fill the job.

(G) Get decisions:

Because people have so much trouble making up their minds, a salesman must have ways of bringing about definite conclusions. Suggesting the right answer and then asking "Don't you think so?" tends to crystallize the thinking. Ask "which" instead of "if" or "what." This also indicates the progress you have made in the sale. Demanding a decision on each point carries the danger that the wrong decision may be made, while the "test for close" method gives the prospect a chance to say, or think "yes" without bringing out an unfavorable decision.

Be sure to stop your sales talk whenever a prospect has reached a decision. Instead of the risk of talking yourself out of a sale, lead into closing questions such as: When delivery is to take place, when a payment is to be made, when a survey can be made, or when a demonstration would be convenient. Thus, you lead a prospect right up to the major decision.

(H) Insure satisfaction:

The sale is completed when the prospect takes possession, but the work of the sales organization is not yet finished. If the customer is expected to make another purchase, full measure of satisfaction must result from the present purchase. A successful business is built upon the customers it keeps, not just from the customers it gets.

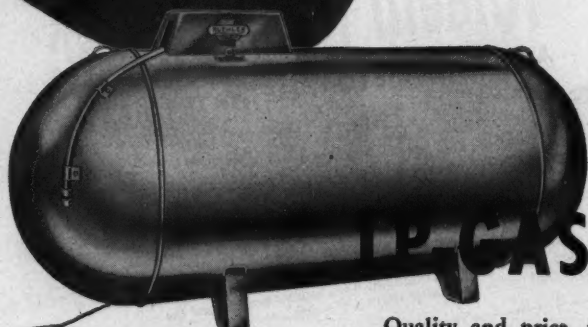
A firm should secure its sales and render its services so as to insure the satisfaction of its customers. To deliver all that has been promised is not enough. The customer expects that extra something. Farsighted salesmen check back after a sale has been made to be certain the customer knows just what her purchase will do, and that she is satisfied.

Insure satisfaction by making certain the customer understands the detailed use of her new equipment so that she may receive all possible benefits from it. Too many people own articles they do not know how to use most effectively. In their own interest for future sales, salesmen should make sure that their customers receive full value from their products. As standard practice, this is also the best means of securing new sales prospects.

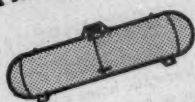
(I) In the final analysis, efficient

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IT'S BUEHLER"**

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For the best PRICE  
For the best SERVICE**



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AMMONIA**



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LOOK FOR ON AN  
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**TANK & WELDING WORKS**

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L. P. gas appliance salesmen, trained in the art of selling, steeped in knowledge of their merchandise and enthused with the service they can render the public are the most potent factor in getting people to buy LPG appliances.

### Brief Coverage of Course

I have covered only briefly a few pages of the kind of material contained in Unit No. 1 of our LP-Gas Sales Training Course, and it is this kind of subject matter that needs to be put into the hands of retail salesmen—new or old.

This Unit No. 1 contains more than 80 pages—jammed full of sound, basic, sales knowledge that we should all study—and apply.

In this unit we also deal with such topics as "Customer Handicaps and How to Overcome Them," "Handling Prospects in The Store," "Bringing In Prospects," "Getting Prospects Outside the Store," "Development and use of a Prospect File," "Preparing for Effective Demonstrations," "Analysis of Prospects," etc.

There isn't a salesman alive today that can't learn and profit by the study and application of this basic material contained in this No. 1 unit—"The Art of Successful Selling."

The greatest benefit, of course, can be derived, when you, as manager, organize regular Sales Training Meetings using this material as a basis.

Teach—Test—Reteach—Study—Test—Restudy.

But this is not the whole story. I spoke only of one unit—there are eight in all. There is an "LP-Gas Handbook," with 36 pages of down-to-earth, easy-to-read and understand, material on the product. It covers production, background and growth of the industry, information on shipping, handling and applications of the fuel. It also contains information on vapor pressures, weighing and measuring, gravity, heat transfer, combustion, venting, gas pressures, causes of incomplete combustion, etc.

All employees—be they selling or non-selling employees—should have this information on your industry.

Unit No. 3 deals with the L. P. gas range. Thirty pages filled with a wealth of product information and ways to interpret them into terms of customer benefits, plus simplified comparisons with the "Hot Wire" ranges.

Unit No. 4—the L. P. gas water heater. Here are 30 pages loaded with just the kind of information you need and can use. It covers the whole field from an analysis of the market, to sizing, water temperatures, load building factors and facts on competitive equipment.

Unit No. 5—the gas refrigerator. Thirty pages of information on how to sell the advantages of the silent gas refrigerator.

Unit No. 6—Selling LPG home heating equipment. Here is a unit of 40 pages, so basic and so full of useful information, that no salesman, should be permitted to call on a heating prospect, until he is completely familiar with every work contained in it.

Unit No. 7—The L. P. gas clothes dryer. This unit will open your eyes and make you wonder why you haven't been putting more time on the sale of gas dryers.

Unit No. 8—The L. P. gas incinerator. Here is a booklet on one of the most important and new items that you can put on your gas line. When you study it, I know you will have gained many new ideas about the incineration market.

We supply with each of the eight units question and answer sheets for your use in checking yourself or your employees. There is also included, a "Leaders Guide," suggesting how you can get the most out of this material.

All this for \$25.00 per set you say! It should be—Yes, but it isn't.

You have many times said—"Give us this kind of material, for there isn't such a thing for our industry." Now it's here—for you—your employees and your industry. The price—\$4.50 prepaid to you. \$3.60 to members contributing to our promotional program.

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I challenge the salesman who says he can't learn anything of value from this course!

I challenge the manager who says he cannot afford to increase the knowledge and effectiveness of his sales organization.

Therefore, do not hesitate to order and use this valuable training material, for let me remind you that "On the plains of hesitation, bleach the bones of countless millions—who, at the dawn of victory—sat down to wait—and while waiting—died."



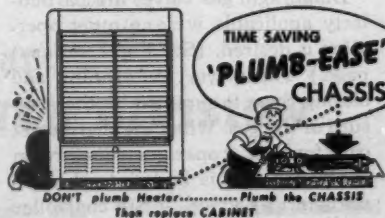
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## AMAZINGLY NEW AND DIFFERENT!

**MODEL NO. 5000** has Fiberglas-insulated cabinet to safeguard baby hands, centralize heat for fan-delivery. Fully automatic . . . safety pilot, thermostatic room-temperature and fan control. Filter, humidifier, draft diverter and summer-switch built in. 100% welded radiator prevents odor, sweating. Efficiency burner gives balanced flame, is non-clog. Cast iron combustion head insures long life. Giant fan provides even, gentle, penetrating heat flow, minus torrid gusts to living zone or cold blasts during warmup. Is quiet, vibrationless. Plumb-Ease chassis drastically cuts installation time. Rated 50,000 btu. Beige and Ivory baked finish, gold-bronze trim. A.G.A. approved for all gases, high altitudes.

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## PART 4

# Servicing Control Equipment

By **CARL E. SMITH**  
Manager of Service Division  
Minneapolis-Honeywell  
Regulator Co.  
Minneapolis, Minnesota

### • Gas Valves

The function of the gas valve is to control the flow of gas to the burner. They are used on gas-fired furnaces, boilers, floor furnaces, space heaters, central heating units and conversion burners. Most of them are two position, with the valve being either wide open or fully closed. There are three general types of valves—the solenoid, diaphragm and motorized.

### • Solenoid Valves

When the thermostat calls for heat by closing its contacts, the valve is electrically energized. (See Fig. 1.) The coil forms an electromagnet which lifts the plunger. When the thermostat is satisfied, the coil in the valve is deenergized and the plunger drops, positively closing the valve.

### • Diaphragm Gas Valve

Diaphragm gas valves are particularly applicable where quiet operation is desired. (See Fig. 2, on next page.) The power for opening and closing them is supplied by the pressure of the gas. When the thermostat calls for heat, it operates a diaphragm controller that is built into the diaphragm gas valve. This controller

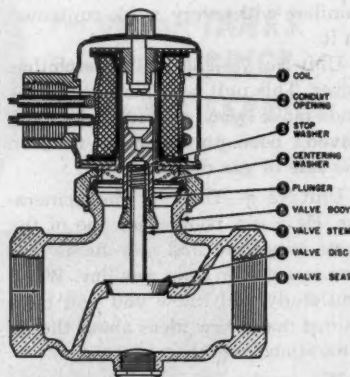


Fig. 1—Honeywell Solenoid Valve, Models V435 and V835.

bleeds gas off the top of the diaphragm when the thermostat calls for heat so that the gas pressure then lifts the diaphragm off the seat and permits the flow of gas to the burner. When the thermostat is satisfied, the controller operates to supply gas pressure to the top of the diaphragm and close off the valve.

### • Motorized Gas Valves

When the thermostat calls for heat, the motor operates to open the valve against the action of a return spring. (See Fig. 3, opposite page.) When the thermostat is satisfied, the return spring assures positive shut-off and current failure protection.

### • Installation

Regardless of the type of valve used, when you install the burner or a separate valve, you must be sure that it is a valve recommended for LPG by the manufacturer. This means that it will have the proper pressure rating of  $\frac{1}{2}$  lb. per square inch and that leakage tests have been

made to assure safe operation. It also means that proper materials have been used in its construction so that butane or propane, which are both excellent solvents, will not dissolve any of the materials used in the construction of the valve. For example, in the diaphragm and motorized valves, special materials must be used in all diaphragms and gaskets to withstand the solvent action of the butane or propane.

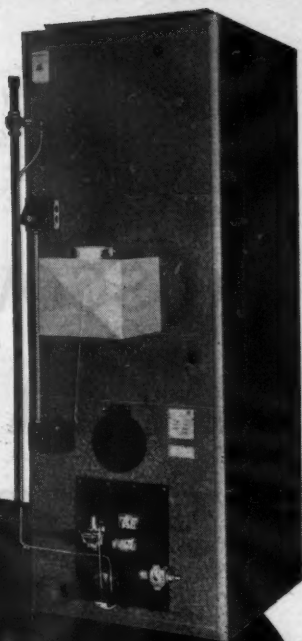
Another point to watch in the application of valves with L. P. gases is to be sure that the valve has sufficient flow capacity to supply the proper volume of gas at the proper pressure. An undersized valve may cause pilot failures or deposits of soot and carbon in automatic appliances. The valve must be large enough to supply the maximum demand of the burner without an undue pressure drop at the valve. The valve size for a particular burner will depend on the maximum demand of the burner, the specific gravity of the gas and the total pressure drop allowable in the system. The maximum burner demand is usually given by the manufacturer in Btu per hour. Capacities for valves are usually given in cubic feet per hour at 0.5 in. water column drop for both propane and butane. To determine the maximum burner requirement in cubic feet per hour, divide the maximum Btu input per hour by the Btu content per cubic foot of the gas supply.



## The WINTERLINE

### Counterflow WINTER AIR CONDITIONER

● Available in 3 sizes—76,000, 90,000 and 100,000 Btu output per hour at bonnet. Approved for zero clearance. Has quiet, new design single port upshot burner. Heavy gauge heating element with single pass radiator. Large, readily accessible cleanout. Manual reset auxiliary limit control. Built-in, replaceable type filters. Easily removed. Factory assembled furnace unit. Burner readily installed on the job. Converts from one fuel to another—gas units easily converted to oil with no loss in capacity. AGA approved for natural, manufactured, mixed, LP, and LP-air gas. FULL Capacity quiet balanced blower. Occupies minimum floor space—small size requires only  $23\frac{3}{4} \times 23\frac{3}{4}$  inches; the other sizes, only  $26\frac{3}{4} \times 26\frac{3}{4}$  inches of floor area. Completely accessible from front.



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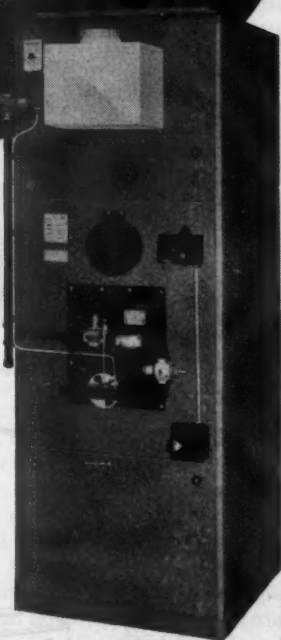
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Available in 3 sizes—76,000, 90,000 and 100,000 Btu output per hour at bonnet. Approved for zero clearance and installation on combustible flooring. Has quiet, single port upshot burner of new design. Heavy gauge heating element with single pass radiator. Large, readily accessible cleanout. Factory assembled furnace unit. Burner readily attached at time of installation. Converts from one fuel to another—gas units easily converted to oil with no loss in capacity. Full capacity, quiet, balanced blower. AGA approved for natural, manufactured, mixed, LP, or LP-air gas. Occupies minimum floor space—small size requires only  $23\frac{3}{4} \times 23\frac{3}{4}$  inches; the other sizes, only  $26\frac{3}{4} \times 26\frac{3}{4}$  inches. Built-in bottom filter inlet is standard. Side filter frames are available.

**FOR DETAILED INFORMATION** on these and other American-Standard SUNBEAM warm air heating and summer air conditioning products, contact your Sunbeam distributor. Sunbeam Air Conditioner Division, American Radiator & Standard Sanitary Corporation, Bessemer Building, Pittsburgh 22, Pa.



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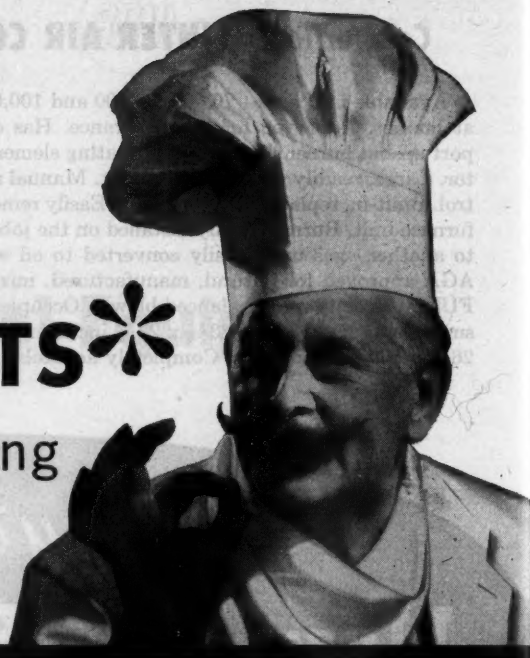
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MARCH, 1954



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## South Bend

COMMERCIAL COOKING EQUIPMENT



To compensate for pressure drop in the rest of the system, it may be necessary to use a valve that is rated at more than the maximum demand of the burner, and therefore, supplies the maximum gas requirement at less than 0.5 in. water column drop.

The piping must supply enough gas to meet the maximum demand of the appliance or appliances without undue loss of pressure in the system. The size of the gas pipe depends on the allowable pressure drop in the system, the maximum gas to be supplied by the system, the length of pipe and number of fittings, plus the specific gravity of the gas. While the system with too high a pressure drop may appear to operate satisfactorily at the time of installation, under full load conditions or cold weather, pressure at the appliance manifold may become too low to sustain a pilot light or minimum flame. Low pressure of the appliance may also cause incomplete combustion which produces dangerous gases and causes soot and carbon to form in the appliances.

### Manual Opening Device

Some gas valves are available with a manual opening device so that the home owner may turn the burner on and obtain heat in case there is a power failure. It is recommended that a valve with a manual opening device should not be installed on a forced warm air furnace. The reason for this is, of course, that if there is no power to operate the valve, there would be no power to operate the fan

and this could therefore lead to a seriously overheated furnace if the home owner attempted to get heat during a power failure.

### Installation of Valves

The valve must be installed so that the gas flow passes through it in the right direction. Valves should be installed on horizontal pipe with the power unit in the upright position. New pipe, properly reamed and free of chips should be used. It is important that you examine the pipe carefully and if you find any chips, clean them off so that they cannot possibly get into the valve and find their way to the valve seat where they would cause leakage.

To avoid the possibility of dope getting onto the seat of the valve, the pipe dope should be put on all but the first two threads of the pipe as shown below.

If in filling the tanks, moisture is allowed to get into the tanks, it is recommended that a double pressure reducing valve be used. Installing a drip ahead of the valve will not remove the moisture.

In the installation of a gas valve on a burner, there are certain bad practices to be avoided. Fig. 4 shows several examples of the right and wrong way to handle the valves. The wrong ways illustrate very clearly that the valve body could be twisted or damaged in such a way that the seat could be squeezed out of round and thus permit serious leakage of gas when the valve is in the closed position. If you will study these careful-

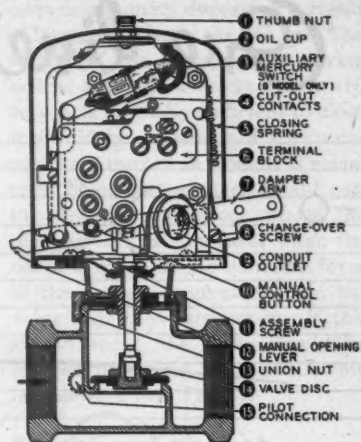


Fig. 3—V855 Motorized Valve.

ly, it will be obvious to you what practices should be avoided.

### • Wiring

The wiring must comply with all local electrical ordinances.

Most valves operate on low voltage when used for house heating and the valves are designed to operate properly with certain specified transformers. For this reason you must be sure to use only the proper transformer for the voltage and frequency and for the particular type of valve involved. The manufacturer's instruction sheet enclosed with the valve will indicate the correct transformer.

The high limit control is usually connected in the thermostat circuit. On series 10 (3-wire low-voltage) valves, the high limit control switch should break the white wire.

A constant source of power to the transformer should be used. Occasionally a job is found where the power to the transformer is interrupted by a light switch. This causes unnecessary and time-consuming service calls.

It is good practice not to run the control wiring too close to the door of the furnace or boiler and not to fasten it to steam or hot water pipes. It is also important to avoid kinking or grounding the wire by carelessly driving staples into it.

After the wiring has been completed, the installation should be checked out thoroughly to make certain that the thermostat and limit control will each operate the gas valve and that the automatic pilot shuts off the main burner if the pilot goes out.

In general there are no special in-

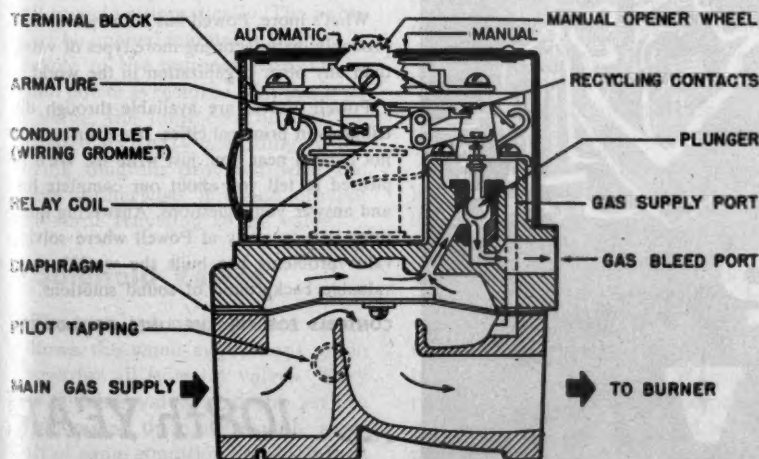
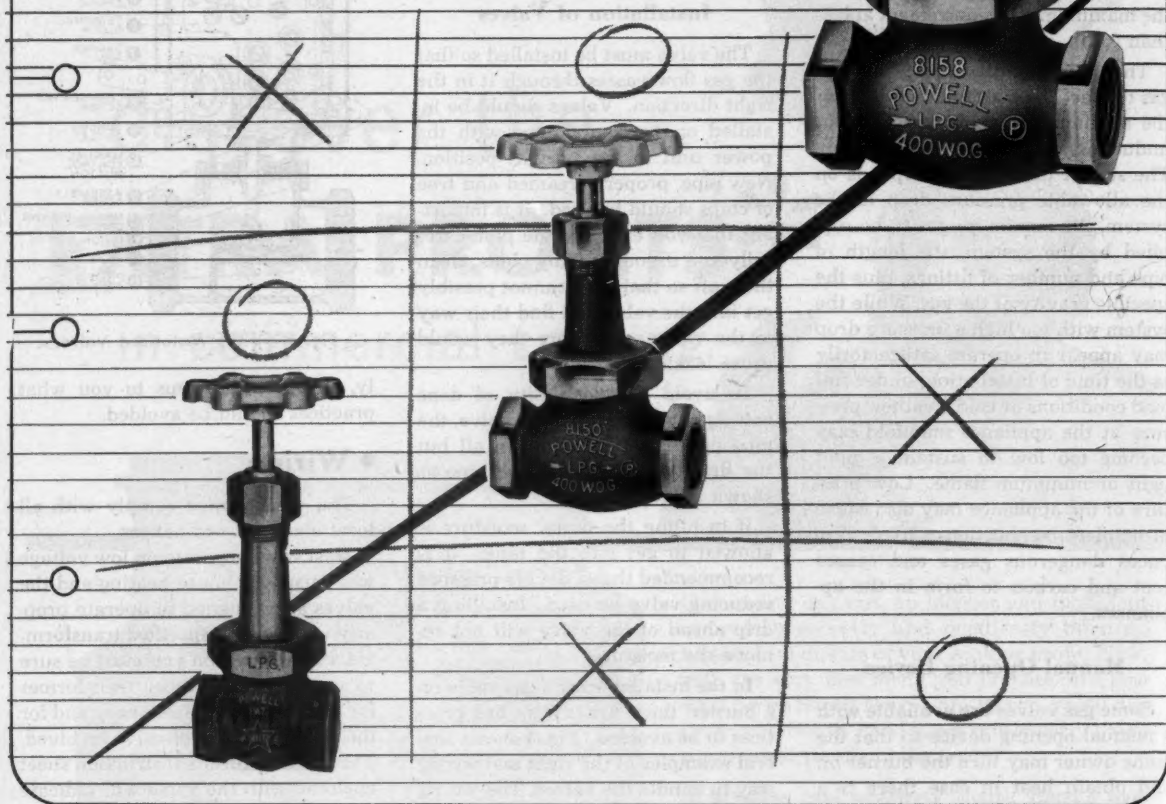


Fig. 2—Honeywell V88 Diaphragm Valve.



# One line always wins



## TOP

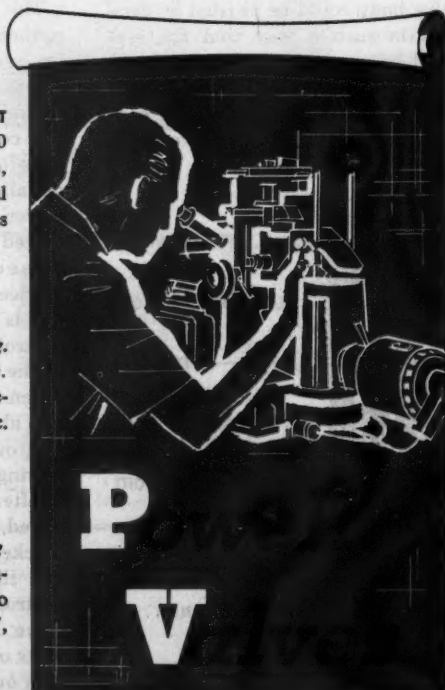
**BRONZE "L.P.G." HORIZONTAL LIFT CHECK VALVE (Fig. 8158).** For 400 pounds W.O.G. Screwed ends, screwed-on cap. Renewable special composition disc. Available in sizes from  $\frac{1}{4}$ " to 3", inclusive.

## CENTER

**BRONZE "L.P.G." GLOBE VALVE (Fig. 8150).** For 400 pounds W.O.G. Screwed ends. Union bonnet. Renewable Special Composition Disc. Sizes  $\frac{1}{8}$ " to 3", inclusive.

## BOTTOM

**BRONZE "L.P.G." GATE VALVE (Fig. 8375).** For 400 pounds W.O.G. Inside screw rising stem. Sizes  $\frac{1}{4}$ " to  $\frac{3}{4}$ ", taper solid wedge; 1" to 3", taper double wedge.



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What's more, Powell has a *complete line*—probably manufacturing more types of valves than any other organization in the world.

Powell Valves are available through distributors in principal cities. If a distributor is not located near you, just write us. We'll be pleased to tell you about our complete line and answer your questions. Answering questions is a specialty at Powell where solving valve problems has built the world's most valuable background of sound solutions.

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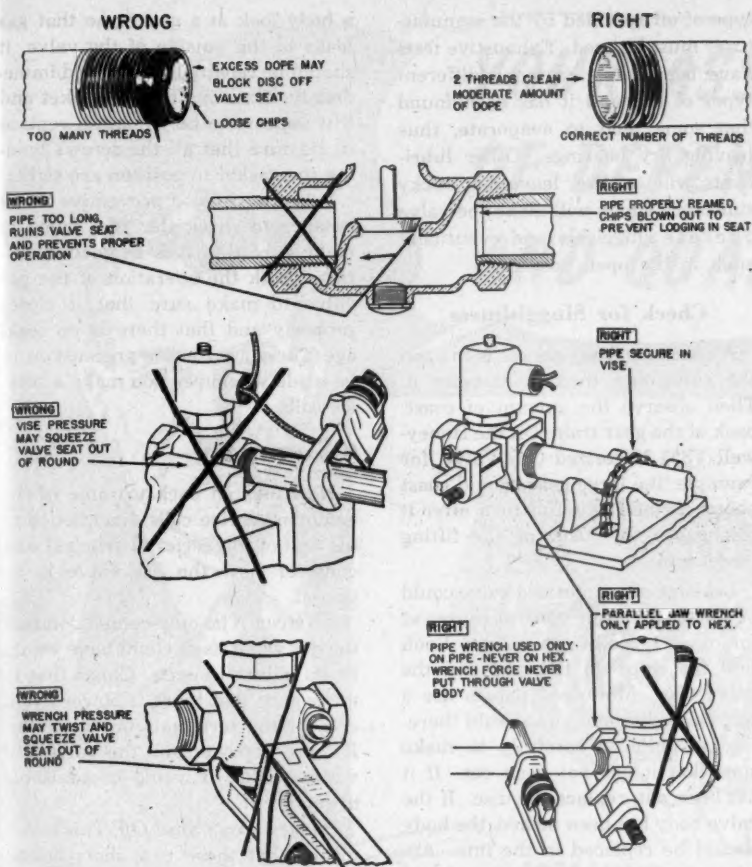


Fig. 4—Recommended procedure for assembling gas valve to pipe.

structions to give the home owner concerning the gas valve unless it has the manual opening feature. In this case, the home owner should be instructed carefully on its use. Some types of the manual opening device are entirely manual. That is, the valve must be opened by hand and must be closed by hand. Other types will recycle automatically. The valve must be opened manually, but it will recycle to the automatic position when power is restored. On this type of valve, the limit control must be installed exactly according to the wiring diagram provided with the valve. Otherwise, it would prevent automatic recycling of the valve.

## • Solenoid Valves

The installation of solenoid valves follows the same suggestions given above for all types of valves. They are reliable valves and the service problems on them are usually a result of some condition developing on the job.

If a solenoid valve begins to hum, it is likely that a small particle of pipe scale or some other foreign substance has gotten between the top of the plunger and the stop against which the plunger rests when the valve is in the open position. This can be corrected by cleaning it. Instructions are given below under the subject of sticking valves, for cleaning them properly. Sometimes a noisy valve will be a result of a low voltage condition and is only temporary.

While the solenoid valve is not likely to stick open, it may happen if either one of two conditions occur. The first is if the power unit becomes bent. This may be done accidentally during installation or carelessly by using the power unit as a lever in connecting the valve onto the piping or connecting conduit. If a valve sticks open on the job and the power unit is visibly bent, it should be replaced immediately. Another possible cause of a solenoid valve sticking

open is a gummy deposit as a result of foreign matter in the gas line. The weight of the plunger, plus spring action, as used in most solenoid valves, is normally sufficient to close it positively. However, if sticky deposits are formed as a result of something being carried along by the gas, the deposits may occur where the plunger and its stop meet when the valve is open. If the adhesive force of the deposit is great enough, the valve will then stick open. If this should occur, the valve should be cleaned according to the following instructions (see Fig. 5):

## • Leakage at Seat

Obviously, any leakage at the seat of a solenoid valve is serious. Such a condition should either be corrected or the valve be replaced. The responsible control manufacturer takes every precaution to insure perfect functioning of the valve on the job. At Honeywell, for example, every valve approved for L. P. gas service is individually tested and inspected. Your chances of encountering a faulty valve from a reliable manufacturer are exceedingly remote. However, certain service problems can develop unless special care is given during installation of the valve. For instance, if chips from the threads on the piping or pipe scale or any other foreign material lodges on the seat, the valve will leak. The valve seat and the disc should be cleaned thoroughly if this is found to be the cause of leakage. The seat and the disc should also be examined to make sure that they have not been damaged.

## • Diaphragm Valves

All of the preceding instructions pertaining to the installation of gas valves in general apply to the diaphragm gas valves. In addition, you must be sure to run a bleed line from the diaphragm valve into the combustion chamber where the bleed gas will be ignited. Care should also be taken not to bend or kink the bleed line so that the bleed gas cannot escape. Otherwise the valve would either fail to open or would open very slowly.

If a diaphragm gas valve develops a hum, it is usually the result of a very small particle or foreign substance between the armature on the relay and the core of the electrical



magnet. This can be corrected by running a flat tool such as a wide hack-saw blade between the core and the armature, pressing on the armature lightly.

A diaphragm gas valve is not likely to stick in the open position. If you encounter one that does, check first to make sure that the armature on the relay that operates the diaphragm control mechanism moves freely. One of the parts may possibly have been bent so that its action is impaired. In this case, the valve should be replaced. If you find that the armature has a tendency to stick to the core, you may find a gummy residue on the surface. This can be removed by wiping both the core and the under side of the armature with naphtha.

Leakage in a diaphragm gas valve would be caused by the same things as leakage for a solenoid gas valve. First, look for chips or other foreign substance on the seat in the valve body and the seating ring in the diaphragm. At the same time, remember to examine the seat carefully to make sure that it has not become cut or damaged.

## • Motorized Gas Valves

The same general installation and service instructions apply to motorized valves as they do to other types of gas valves. While it is not likely that you will encounter a job where the gas valve is used for final shut-off service, you should know that the motorized gas valve is not recommended for this type of service. On industrial applications, for example, a gas valve may be required to remain energized in the open position for days at a time. The heat developed in the motorized type of valve would tend to evaporate the oil in the motor bearings. For this reason, a motorized valve is not recommended for final shut-off service. A diaphragm valve should be used for such applications.

About the only possibility of a motorized valve sticking open is when the valve is damaged in some way so that the valve stem is bent, or if the valve has not been oiled properly. The motor bearings should be oiled at least twice each heating season, and oftener if the valve is mounted in a warm location. Instructions for oiling them are found on the manufacturer's instruction sheet and the

type of oil specified by the manufacturer must be used. Exhaustive tests have been made on many different types of oils and it has been found that some tend to evaporate, thus leaving dry bearings. Other lubricants will oxidize, leaving a sticky substance which will make the valve operate sluggishly and eventually stick in the open position.

### Check for Sluggishness

A check for sluggishness is to open the valve and then de-energize it. Then observe the amount of coast-back of the gear train. On the Honeywell V855 Motorized Gas Valve, for example, the large gear should coast about one-half of a full turn after it disengages the hook of the lifting mechanism.

Leakage of a motorized valve could be due to the same general causes as for other types of gas valves. Look first for chips on the seat and the valve disc. Motorized valves use a soft valve disc and you should therefore examine it carefully to make sure that it has not been cut. If it has been cut, replace the disc. If the valve body has been nicked, the body should be replaced in the line. Another possible cause of leakage would be if the seat were seriously distorted through mishandling of the valve as shown in the charts covering the right and wrong ways of assembling valves in the gas line.

If any type of gas valve develops

a body leak at a gasket, so that gas leaks to the outside of the valve, it should be repaired or replaced immediately. Examine the old gasket and if it appears to be damaged, replace it. Be sure that all the screws holding the gasket in position are tight.

It is always good preventive maintenance to check the pilot flame to make sure that it is in good condition, check the operation of the gas valve to make sure that it closes properly and that there is no leakage. These are routine precautions to be made whenever you make a service call.

## • Summary

Now let's go back to some of the common service calls (mentioned in the first of this series of articles) and consider how the gas valve is involved.

**No Heat.** The only connection that the gas valve itself could have would be its failure to open. Check first to make sure that there is power available at the terminals on the valve. If there is power and the valve still will not open, it would be advisable to replace it.

**Burner Won't Shut Off.** This either means that there is a short circuit in the wiring so that the valve is still electrically energized or that the valve has been de-energized but is stuck open for some reason. The possible reasons and corrections for these were given above for each type of valve.

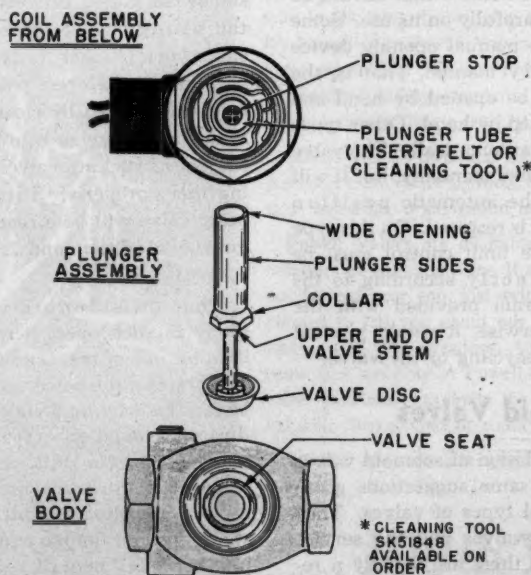


Fig. 5—Portions of typical solenoid valve which should be cleaned with naphtha gasoline.



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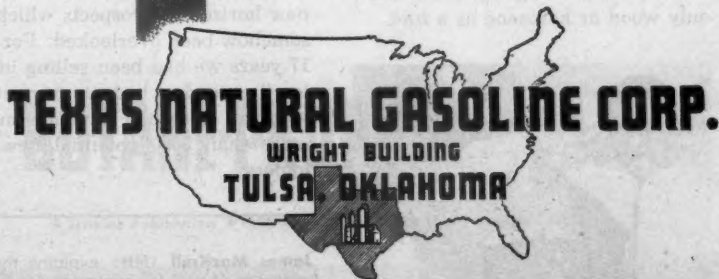
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# NEW HORIZONS



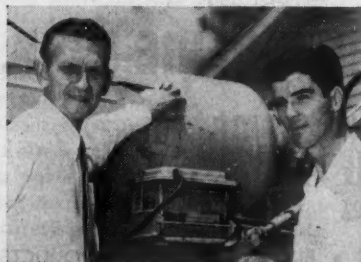
## and Their Obstacles . . .

By **JAMES MacKRELL**  
Mandeville, La.

**B**EFORE we take a look at the obstacles to be overcome in order to reach the bright new horizons of a better day for our industry, let's take a backward glance down the path we have come in the 20-odd years of our history as a national industry.

Probably you have never paid yourself a compliment that you richly deserve as an LPG salesman. Have you ever pictured yourself as an educator? In your daily battle for sales maybe you have never once thought of yourself as an educator in the gigantic movement that has changed the way of life in rural America.

Nevertheless, it's true, because in the past 20-odd years the entire American standard of living in rural areas has risen in proportion to the efforts put forth by LPG salesmen in placing tanks and gas ranges in rural homes which for generations knew only wood or kerosene as a fuel.



There will never be a time in our life when there won't be some family who needs a tank, range and heaters. Do you honestly doubt that? Well, listen to this:

One day last year, in New Orleans where there are 11 radio stations, I proved this point. Using one of the smaller stations on an early morning program, every day for only five days, and offering no other inducement than a promise to do "something nice" for every family who still used either wood or kerosene as a fuel for cooking and heating, I received in response more than 5000 cards and letters bearing the names and addresses of good bona-fide prospects.

Did we "do something nice" for them? We surely did: we made it possible for many of them to start toward modern living with a tank, gas and a gas range.

Now don't miss the big point here! We suddenly had discovered a bright new horizon of prospects which had somehow been overlooked. For over 17 years we had been selling in that territory and so had our competitors—yet all of us had somehow missed more than 5000 potential new customers.

**James MacKrell** (left) explains the advantages of an LPG conversion to **George Shannon**, farm editor, of station WWL, New Orleans.

And again let me emphasize that people in the 5000-odd homes who were listening to me at that particular hour cannot begin to be all of the overlooked prospects. Ten other stations had listeners who still use wood or kerosene, and thousands of other people who were prospects for L. P. gas were not listening to any station at all.

So, while it's true, in rural areas that our entire American standard of living has risen directly in proportion to the efforts the LPG salesman has put forth, it is equally true there are profitable new horizons to reach if we can overcome some of the obstacles that stand in our way.

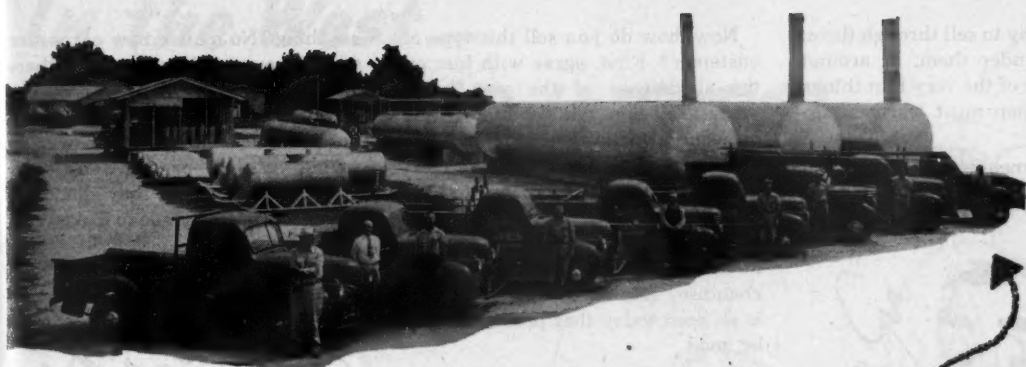
### The Stumbling Blocks

Eight out of 10 prospects you see will permit you to follow, step by step, the six steps of "Analytical Selling" outlined in the first article of this series (see page 39, December issue, BUTANE-PROPANE News). But there are two out of 10, or 20%, who for various reasons are stumbling blocks in our path to the "brighter horizon." We can effectively group them under these six headings:

1. The Skeptic Prospect.
2. The Silent Prospect.
3. The Hesitant Prospect.
4. The Price Buyer.
5. The Gabby Prospect.
6. The "Know-It-All."

Before success can be yours you





## Don't miss the *Big Buyers!*

In the Liquefied Petroleum Gas Industry the *big buyers* are the *bulk plant operators*. These operators consist mainly of:

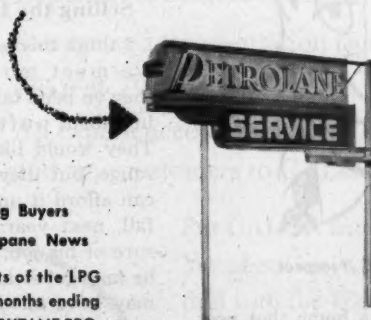
**Distributor-Dealers with bulk storage**... wholesalers and retailers who are quantity buyers of everything needed in the installation and use of L.P. gas. They sell and install domestic appliances, and they virtually preempt the field in the sale of commercial, agricultural, and industrial appliances and equipment.

**Piped Town Systems (Utilities)**... heavy buyers of equipment, and of the domestic, commercial, and industrial appliances for which there is a market in the areas they serve.

Complete coverage of the known bulk plants is given *only* by BUTANE-PROPANE News. There are 4,940 Distributor-Dealer and Piped Town bulk plants (June '53 count)—and B-P News serves every one of them, with a total of 7,372 subscriptions. The second paper in the field shows only 4,618 such subscriptions... *fewer than the actual number of plants.*

Don't MISS the big buyers... **SELL** them through the *pioneer and preferred\** publication of the LPG industry—BUTANE-PROPANE News.

\*In eight reader surveys, made independently by eight different advertisers in the past 4 years, B-P News has been voted first choice by a composite margin of 3.32 to 1.



You Reach the Big Buyers  
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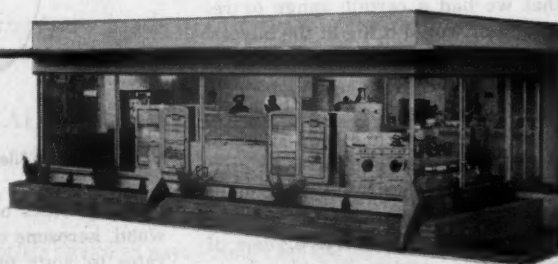
Publishers' Statements of the LPG publications for the 6 months ending June 1953 show that BUTANE-PROPANE News leads in circulation with

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must find a way to sell through them, over them, under them, or around them, and one of the very first things a good salesman must learn is customer types.

It's like someone once said, "All husbands are alike—but the Lord put



The "Skeptic" Prospect

a different face on every one of them so wives could tell them apart."

In one sense, all customers are alike—they all buy merchandise, but that is where the similarity ends. Every prospect falls under one of the headings listed above, so to be able to sell effectively we must instantly be able to recognize the type of prospect we're dealing with.

Again, as I have repeatedly pointed out in previous articles, we are in a new era of selling. The year of 1954 is the era of "Quality," with the "Sell Me Again" type of customer. A few years ago the mere announcement that we had a certain range or refrigerator would bring in the buyers.

But today the prospect says, "Why should I buy?" He has to be convinced—he's the "skeptic prospect"—the fellow who has been stung in the past. He bought an oven that wouldn't rust—but it did. He bought a war-time wringer washer and was told it would give him five years of trouble-free service. It folded up in two years. He thought the balance due on his purchase was \$300, but when he got the bill it totaled \$398.38 to include the "carrying charge." He's afraid of gas because he heard of a neighbor's stove that exploded. You show him a clipping that proves that it was a kerosene stove that exploded and he insists that the newspaper made a mistake. He's the confirmed "skeptic" who refuses to believe anything or anybody.

Now, how do you sell this type of customer? First, agree with him on the shoddiness of the war boom years. Tell him you also were stung on some goods you bought. Then stress firmly that surely he can't blame you for what happened to both him and yourself. Assure him that those days are gone forever. We are now living in a day of "Quality" merchandise. Explain that competition is so keen today that products must be good.

Just as the doctor asks, "Where does it hurt?"—you ask your prospect, "Where does it hurt the worst?" Find out his biggest gripe. Then show him, don't just tell him, why your tank, range, refrigerator or whatever you are selling is now made in such a manner that this can't happen to him in the future. Just as strongly as you have agreed with him on faulty appliances disagree with him on the danger of butane or propane gas.

You have an ace card to use with the skeptic who is "Afraid of Gas."

Save this "ace in the hole" until the very last. Go to any insurance firm that writes fire coverage, get the



The "Silent" Prospect

coverage rates on a home that uses wood, kerosene or gas and show the rates to your prospect. This will clinch any argument at once.

After you have taken the five steps of "Analytical Selling" with him, wind up the sale by offering him a real bonafide guarantee.

#### Selling the Silent Prospect

This is the type who just stands or sits and not only doesn't say anything but he won't even smile or change his expression. Apparently, they listen, but they just don't say

anything. No matter how earnest or serious you are, they just stand there and look at you.

Never ask this type of prospect a question which they can answer by saying yes—no—or nodding their head. The fact that they don't ask you to leave is your cue to make them



The "Hesitant" Prospect

open up by asking a question that will require a sentence to answer. The secret is to force them to talk. These people don't intend to be discourteous, they are usually shy and timid. Ask them about schools, church, crops, the weather. Just keep probing until you find some mutual subject they are willing to talk about. Once you get them started they will follow you step by step to your sale.

#### Selling the Hesitant Prospect

I think this is the type of prospect we meet most frequently. "Yes, they've been talking about or thinking about putting in gas, BUT—" They would like to buy a new gas range, but they don't see how they can afford it until next month, next fall, next year. The husband isn't sure of his job; he may get laid off, he may get sick. I want this, but we may have another depression since we have a Republican president, etc., ad infinitum, ad nauseum.

These are not baseless arguments. In the mind of the "Hesitant Prospect" these are real fears that cannot be lightly brushed aside. These fears have to be met head on, faced squarely, and honestly dissipated. The best way to handle this type of prospect is to raise the questions yourself before he does and to reason them out. Forget your merchandise for the moment, and carefully show him or her how groundless these fears are. Very definitely you must give this type a



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slight shove. You must assume all the way through your sales talk that you expect to deliver the merchandise just as soon as possible. Once you feel you have sincerely done your best, then start down the analytical road to successful selling.

### Selling the Price Buyer

These are the folks who, living in an era of "quality," are just not impressed. They are interested only in —price—the best deal. The cost is all that counts. They are shopping to

find the cheapest price in town. They will say, "Leave your prices with us and we will call you if yours is the best deal." Meaning the lowest price.

In my experience there are two good ways of meeting this situation. First, be firm and insist that under NO CIRCUMSTANCE will you cut prices. Also in NO case ever leave your prices behind you. If you do, any competitor can and will cut you to ribbons.

Ask this type of prospect point blank what is the best price he has



The "Price Buyer" Prospect

received so far? The chances are 99 to 1 he'll tell you. It flatters his ego to think he's smarter than most by seeking the cheapest price. The "Price Buyer" almost invariably has something else they want to buy beside your merchandise. In most cases this is the hidden underlying motive for their shopping around attitude.

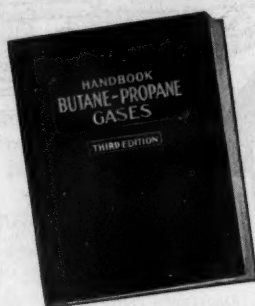
Recently one of our salesmen had left his prices behind him on an order that included a tank, a tank of gas, a range, three outlets, two space heaters and a refrigerator. As we were driving out to this appointment after supper one night the salesman told me we'd get that order because he knew he was low bidder.

In that area we had a competitor whom I was particularly anxious to break of sucking eggs. I have seen him sell and make an installation for as little as \$400 on which he couldn't possibly make \$20 gross profit. When we arrived at the farm house we soon discovered that our vicious competitor had been there. Our range carried a legitimate \$20 trade. Where two heaters were installed we had a legitimate \$15 trade and a \$10 trade on our refrigerator, so \$45 was our sum totals. The salesman had learned from a reliable source that this couple had shared in an inheritance, so he assumed it would be a cash sale.

Our competitor had heard the same thing and was working on the same assumption. He had upped his range price from \$239 to \$289 and then offered \$100 for an old kerosene stove that wasn't worth even \$10. He had upped the price \$25 on his refrigerator and had offered them \$50 for an old wooden ice box that couldn't possibly be sold for \$5. He told them he would loan them a tank.

Let me repeat, in dealing with this type of prospect, you must remember they have something else they want beside your merchandise, they are trying to stretch their dollars to

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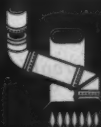
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cover more goods. So when I saw how our competitor had raised his prices and offered such ridiculous trade, I asked the prospect how much cash he had. I was told they had \$585.

Then I asked, "Do you folks have an income in addition to what you make on this small farm?" "Yes, indeed," the man said, "I walk a pipe line for the oil company and have for 14 years. I get \$275 a month from that." The wife quickly added with pride that she maintained a flock of chickens, enough to keep a small

grocer in town supplied with fresh eggs.

Here was a steady income family, so I asked the really important question: "In addition to the tank, range, heaters and refrigerator, what else would you like to have for your very own?"

"Lan'sakes," the wife said, "you know we had sickness in our house such a long time—until my father-in-law passed away. I ain't had a new dress in many a year, and come Easter, I do want one."

The husband said, "Like she said,



The "Gobby" Prospect

papa lived with us—and there was the old place—five of us boys—some of them not doing too well. Long as he was livin' we couldn't sell the old place. Now I'd like to trade in my old car for a pickup truck."

"Any idea," I asked, "how much it will cost to trade?"

"Sure," he said, "three hundred and eighty-five dollars."

"That fellow who was here a while ago," I said, "did he wear a white shirt and a red tie?"

The man and wife nodded.

"Did he have on a high crown hat with the brim rolled up all around?"

They nodded again.

"And was he wearing a thin mustache?"

Again they nodded.

"Look," I went on, "you folks are too smart to have a city slicker like that make a sucker out of you. You are good, clean country people. You wouldn't knowingly cheat anyone, would you? Don't you belong to that little church down the road?"

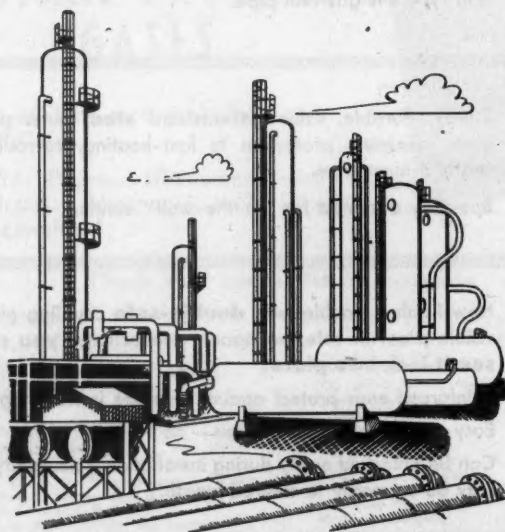
They nodded quickly.

"The only interest that fellow has in you is to get that \$585 cash money you have to spend. He has no real interest in you. He doesn't trust you—he wants to take every cent for himself. He's raised his prices so he can offer you ridiculous trade-ins. Deep down in your heart you know that old kerosene stove isn't worth \$10—and you know that old wood ice box is over 20 years old and couldn't be sold for \$5. I know you folks want to do the right thing. I know I want to do the right thing, SO HERE IS WHAT WE CAN DO.

First, my good lady, you take \$50 of that \$585 and get your new Easter outfit, and for you, my good man, take \$385 and first thing in the morning get your new pickup. Now our

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**MODEL 100**  
New 1954 Chevrolet 2-ton, 2-speed axle, with 1400 W.G. twin propane tank, piped complete—\$3,845.00. With 1954 International L.P.G. factory equipped—\$4,255.00.



**MODEL 200**



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## PACKAGED TRUCK TANK UNITS

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1400 W.G. 1600 W.G. 1800 W.G.  
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We can furnish any make or model NEW TRUCK, including Ford, Chevrolet, G.M.C., Dodge or International (factory LPG equipped), and save you up to \$600.00 on a new truck.

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New 1954 2-ton Chevrolet, 2-speed, 825x20, 10 ply rear tires — \$2150.00 —

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company trusts you! You pay me just \$138.20, which will be the down payment on honest merchandise, and give us four notes in advance. You can wait until next strawberry season to pay any more. I'll give you \$45 in trade, \$15 for your old stove and ice box and \$30 for the old wood heaters, then we will all get what we want."

Without saying another word I started writing the order, and the man said, "Mama, go get him the money." There is always a way to handle every price buyer—if we can find it!

## Selling the Gabby Prospect

Here are the semi-egotists. They are so glad you've called. They are just dying to tell you something. They want to be noticed. So, sit and listen, and keep your catalog well hidden. These people will almost invariably sell themselves. After you've listened to Grandpa's rheumatism, heard all about the children's teacher, heard all about the neighborhood gossip, the flowers, the garden—after some 10 to 15 minutes of this, hand her the catalog. Let her read it out loud, she will. Get a word in edgewise when you can and ask her all about her family. Where her husband works, how many other children. What she likes to cook best. Her favorite recipe. Then stop her cold! This must be about the most interesting morning, afternoon or evening you've ever spent because you've learned so much. But now you want to show her something. Do your best to take her through the six steps of "analytical selling." If this gabby type is handled skillfully they are about the easiest of all to sell.

## Selling the Know-It-All Prospect

Here is egotism in its worst stage. These are the folks who have seen all there is to see, know all there is to know, and can tell you all about it! These are the ones you simply pitch the rope to and let them hang themselves. Sit humbly at their feet and learn. This is your golden opportunity to drink in every pearl of wisdom that falls from their lips. My, oh, my, isn't it wonderful. Here is your moment of triumph, you are here at the source of wisdom.

After 10 or 15 minutes of listening, hand them one of your catalogs and ask them to show you how they would sell this stuff. One of the most

successful salesmen I know is a personal friend of mine living in Chicago. He sells doctors supplies. He earns well over \$25,000 a year in commission. He knows that most MD's are this type. They know all there is to know about everything there is to know. Next to their knowledge, their second greatest pride is the appearance of their office, and closest to their hearts is their examination room.

My friend simply gains admittance to the doctor and tells him frankly, "Doctor, I don't know anything about this line. I actually don't know whether my scalpels and sutures are



**The "Know-It-All" Prospect**

better than my competitors or not, but please take a look and *you tell me what you want and why*. This never fails! I'm sure he's the leading salesman in his field because he thoroughly understands his customer type.

Well, my friend, I hope you've gained something valuable from reading this far. There is the picture, ahead in the distance is a "Brighter Horizon" for all of us—the new day where it's entirely plausible to visualize a propane or butane pump at every service station—the day when gasoline and other fuels have gone the way of all flesh. A day when propane and butane will be accepted for what it is, the BEST, the MOST ECONOMICAL FUEL on the market for any and all combustion power plants. A day when salesmen will be as skilled in the selling profession as an MD is scientifically trained in his profession. Also there in the picture you will see the obstacles which we meet every day—the obstacles which prevent our reaching those horizons as quickly as we would like. Whether we get there or not depends upon just one person—that person is YOU!



**A SMOOTH-LOOKER, TOO!**



**UTILITY PREMIER MODEL**

**AUTOMATIC GAS WATER HEATER**

Utility's handsome new 20 and 30 gallon Premier model gives your most demanding customer clean, simple lines, a beautiful chrome top and baked enamel luster finish—everything that will make her proud to add it to her kitchen or utility room.

Beauty, plus efficiency, rugged dependability, and long life—plus such Utility advantages as

- Dual Flow Flue, great new principle that eliminates baffles, gives 33% more heating area.
- Metered Kem-Rod to prevent rust and corrosion, assure clear hot water.
- Trouble-free Engineering throughout.
- Double Extra Heavy Boiler, for long life, freedom from tank trouble.
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Your customers will be happier with Utility... and so will you! Get full details on the complete Utility line of water heaters today.

*For further information, see your Utility Water Heater Jobber or Distributor—or write:*

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**AUTOMATIC GAS WATER HEATERS**





## ASSOCIATION NEWS

### Tentative Program Set For Chicago Convention



Sheldon Coleman

A streamlined program of speeches and open forums on vital industry problems and a trade show of record proportions will attract an estimated attendance of 3300 industry representatives to the 1954 annual convention of the Liquefied Petroleum Gas Association in Chicago, states Howard D. White, executive vice president. It will open for a four-day run on Sunday, May 9, in the Conrad Hilton Hotel, Chicago.

The giant exhibit of LPG appliances and equipment, covering 45,000 sq. ft. of space in the exposition hall, annex and lower lobby, will reveal the latest types of ranges, water heaters, refrigerators, heating equipment, clothes dryers, incinerators, farm and carburetion equipment. For the first time truck manufacturers will display their L. P. gas models. All of the 217 booths available for the show are already under contract.

The exhibit will be open Sunday from 1 to 6 p.m., Monday from 9 a.m. to noon, Tuesday from 9 a.m. to 5 p.m., and Wednesday from 9 a.m. to noon.

First speaker announced for the convention is Sheldon Coleman, president of the Coleman Co., Wichita, Kan., and president of the Gas Appliance Manufacturers Association. He will address the Marketers Section at its Wednesday afternoon meeting, according to A. H. Cote, Suburban Propane Gas Corp., chairman of that group. Several other prominent industry men are scheduled for the rostrum at this meeting.

Open forums, rather than formal programs, will dominate the Wednesday sectional meetings of the manufacturers and producers.

The first general convention session will be the Monday luncheon. A national political figure will be the featured speaker. A business session

will follow with brief reports by association officers and committee chairmen on activities of the past year.

In order to give convention-goers one full day to inspect the trade show, no speaking program is planned for Tuesday. However, the annual breakfast for state association presidents will be held Tuesday morning. A speaker of national significance will address the Wednesday luncheon.

Social events planned for the 1954 convention include a cocktail party Monday evening and a banquet and variety show Wednesday evening. Special tours, luncheons and other entertainment will be arranged for the wives and daughters.

LPGA President M. L. Trotter of Carolina Butane Gas Co., Columbia, S. C., will preside at the convention. J. R. Herrin, Jr., Coastal Butane Gas Corp., Summerville, S. C., is chairman of the arrangement committee.

### Arkansas LPGA Hold Mid-Year Meeting

Sixteen states were represented at the mid-year meeting of the Arkansas LPGA held Jan. 10-11 in Hot Springs, with the attendance reaching 235, despite a sleet and snow storm.

Otis S. Cash, president, presided over the two-day meet which began with Friendship Hour on Sunday and ended with a dinner-dance and floor show on Monday evening, Jan. 11.

Speakers included: Sidney L. Stapleton, Consolidated Gas Co., Atlanta; Charles M. Corken, Corken's, Oklahoma City; Frank Henke and Bill Johnson, Harper-Wyman Co., Chicago; and Charles Craig, Truck Insurance Exchange, Little Rock.

The annual meeting and trade show is scheduled for June 6-8, according to A. W. (Johnnie) Porter, executive secretary.

### New Officers Elected For Delmarva Group

The tri-state LPG organization known as the Delmarva Association (Delaware, Maryland and Virginia) have recently elected new officers as follows: Howard B. Dorey, Collins

and Ryan, Inc., Millsboro, Del., president; A. J. Priestley, Suburban Gas Co. of Delaware, Newark, Del., vice president; David Stavely, Chesapeake Propane Co., Easton, Md., secretary; and Maurice L. Peacock, Eastern Shore Gas Co., Snow Hill, Md., treasurer.

### Michigan LPGA Elects New Officers

The Michigan LPGA held its annual convention Jan. 25-26 at the Pantlind Hotel, Grand Rapids, and elected the following new officers: L. C. Wright, Benton Harbor, president; V. R. Storey, Detroit, vice president; J. O. Gower, Eureka, secretary. New directors were: William Mayo, Detroit; James Davidson, Boyne City; M. R. Frank, Adrian; Alton Berquist, Carney; and Gelec Palm, Negaunee.

The first day's program featured a service school and included the following speakers: Frank Henke, J. K. Calhoun, and Arnold Renner. Main speaker for the convention was Max Fetty, Delta Tank Manufacturing Co., and other speakers included William Johnson, J. P. Green, C. A. Perry, and Bruce E. Houston.

### Management Short Course Planned at U. of Miss.

A short course in LPG management is scheduled to be held July 11-13 at the University of Mississippi, sponsored jointly by the university and the Mississippi LPGA.

Topics being considered for the program include: Accounting for LPG Dealers; Cost Determination for LPG Management; Credits and Collections in the LPG Industry; LPG Customer Records; Advertising for Mississippi LPG Dealers; Sales Promotion for Mississippi LPG Dealers; and The Insurance Outlook in the LPG Industry.

### Western Liquid Gas Assn. Supplies Members Decals

Western Liquid Gas Assn. announces that it can now supply attractive four-color membership de-



# TWO GREAT NAMES...



**BRENNAN'S** RESTAURANT IN OLD NEW ORLEANS  
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## FAMOUS NAMES IN COMMERCIAL COOKING DEPEND ON GARLAND!

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Brennan's head chef, Jack Brennan, says: "I first cooked on Garland equipment over thirty years ago! With experience, I know only Garland and get produce the best of dependability, economical. That's why we insist upon, believe me, I like everything about our Garland ranges!"



The battery formation illustrated includes:  
Spectro-Heat Hot Top; Open Top; Unitherm Fry Top; Deep Fat Fryer; and Side Fired Broiler. Units available in standard black-Japan or Stainless Steel finishes.



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cals in the 6-in. size at 25 cents per copy. A 3-in. size, for windshields and other small applications, and a 24-in. size for use on tank trucks, will be available in the near future.

## LPGA Membership Drive Train Ahead of Schedule

Art Bone, Chairman of the membership committee of the LPGA, submits his first progress report on the current campaign to add 400 new members to the Association. With 22% of the campaign time elapsed, 27% of the quota has been reached.

The drive for new members is organized into a contest between districts, around the central theme of an excursion train on a 400 mile run. The job is to get the train to its destination, by coordinated effort of the superintendents and section foremen, who are the regional and state members of the membership committee, and the district secretaries of the LPGA.

In top spots are superintendents Bill McMillen, (Rocky Mountain district), Les Fagan, (Cotton and Tobacco Belt), and Ace Ferrell, (Central States).

## New LPG Calendar

A butane-propane calendar, custom-made for dealers in the liquid petroleum field, is being offered by Brown & Bigelow, St. Paul advertising specialties firm.

The new LPG calendar reminds prospects of the "lasting pleasure" of this modern fuel. It pictures the magic in the kitchen through L. P. gas; the comfort of gas heat; the convenience of instant hot water and the multitude of advantages to make life easier for the farmer and the housewife. Two complete pages of butane-propane "clues to comfort" are contained in this special calendar edition—a tribute to the service and contributions of the LPG industry.

More than forty famous Brown & Bigelow paintings are available for use on the front of the calendar for appealing to particular tastes in any section of the country.

## Ray Little With GAMA

Ray Little, for the past nine years general sales manager of the Equit-

able Gas Co., Pittsburgh, Penna., has joined the Gas Appliance Manufacturers Association as director of sales promotion.

## James E. Pew Named Chairman LP-Gas Promotion Committee



James E. Pew

James E. Pew, manager of the natural gas and natural gasoline department, Sun Oil Co., Philadelphia, was recently elected chairman of the National Committee for L. P. Gas Promotion. He succeeds Lee A. Brand, vice president, Empire Stove Co., Belleville, Ill., who has held the post since February, 1950.

Adoption of a new name for the organization—National Council for L. P. Gas Promotion—was another major item of business at the session.

K. R. D. Wolfe, vice president, Fisher Governor Co., Marshalltown, Iowa, became chairman of a newly constituted executive committee. Serving with him will be three LPG marketers and three other members representing the L. P. gas production, appliance and equipment branches of the industry.

Robert E. Borden, director of the L. P. Gas Information Service, Chicago, who has been secretary of the national committee since its inception in November, 1949, was elected secretary of the council.

High tribute was paid to Lee Brand, retiring chairman, at the recent meeting. A resolution adopted by the group cited him for "his outstanding leadership, untiring service and devotion to the advancement of the LPG industry" during the four years of his incumbency. At a luncheon held in his honor, it was announced that a suitably inscribed testimonial plaque will be presented to him in recognition of his many contributions to the success of the program.

Plans were discussed at the meeting for an intensified drive for new contributors to the promotional program. Supported by voluntary contributions of LPG marketers and producers, appliance and equipment manufacturers, the project embraces broad-gauge advertising, publicity and training activities. A new round of ads in 52 national and regional magazines with a combined readership of 116,277,000 has just been released.

## Byron Howard Elected Pres. California LPGA

Byron E. Howard was elected president of the California Liquefied Petroleum Gas Assn. at a dinner meeting on Jan. 15 at the Tagus Ranch near Tulare.

Howard has been active in the association for the past six years.

Other officers installed were: Robert Blair, Dinuba, vice president, and Wilfred Ennis, secretary-treasurer.

## Harry Schagrin Becomes Member of LPGA Board

Harry Schagrin, Schagringas Co., Middletown, Del., has been elected by the board of directors of the LPGA to represent the state of Delaware on the board.

Mr. Schagrin, one of few Delaware L. P. gas dealers with membership in the national association, has been active in the L. P. gas business for a number of years and his progressive management has gained him national recognition.

## Electrical Group Organizes

A new group to be known as the Conference on Coordination of Electrical Sales and Promotional Program was recently formed. It is tailored to fit what was termed "a long existing gap in coordinating the overall efforts of the several national industry associations." Membership in the group will include representatives of the Edison Leagues, National Association of Electrical Distributors, National Electrical Manufacturers Association and National Appliance and Radio-TV Association.

This development and other recent events indicating a more aggressive promotional outlook than ever before by electrical competition represents a real challenge to the L. P. gas industry which can only be met by expanding and intensifying the National LPG Promotional Program.

LPGA members who are not yet actively participating in the industry-wide effort are invited to join now.

## NGAA Holds Regional Meet

The Permian Basin regional meeting of the Natural Gasoline Association of America was held Feb. 26 in the Lincoln Hotel, Odessa, Texas.

Top speaker scheduled on the program was Paul Kayser, president, El Paso Natural Gas Co., and technical papers were presented by W. R. Kehoe, American Meter Co.; E. W. Wallace, Shell Oil Co.; Vern Ford, Clark Bros., Inc.; A. R. Worster, Ingersoll-Rand Co.; and C. J. Kremer, C. Lee Cook Co.



# SMITH PRECISION

## Butane-Propane PUMPS



**TC-1044 Truck Pump:** Rated transfer capacity 20 gpm at 500 rpm, directly connected to power takeoff. For 1½" piping.

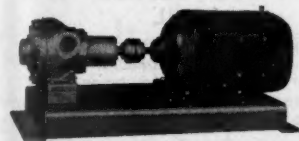
**TC-1044H Truck Pump:** Rated transfer capacity 35 gpm at 900 rpm, directly connected to power take-off. For 2" piping.

### FOR TANK TRUCK MOUNTING

### FOR BULK PLANTS

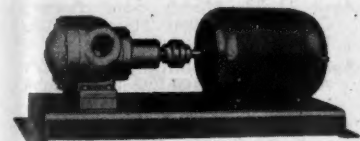


**MC-1:** Rated transfer capacity 4 gpm with ½ hp 1800 rpm motor and 8 gpm with ¾ hp 3600 rpm motor. For 1" piping.

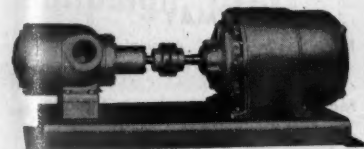


**MC-1044:** Rated transfer capacity 20 gpm with 1½ or 2 hp motor. For 1½" piping.

**MC-1044H:** Rated transfer capacity 35 gpm with 2 or 3 hp motor. For 2" piping.



**MC-2:** Rated transfer capacity 50 gpm with 3 or 5 hp motor. For 2" piping.



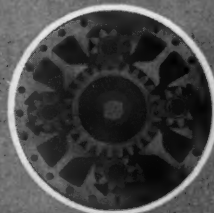
**MC-3:** Rated transfer capacity 100 gpm with 5 or 7½ hp motor. For 3" piping.

**MC-4:** Rated transfer capacity 150 gpm with 7½ or 10 hp motor. For 4" piping.

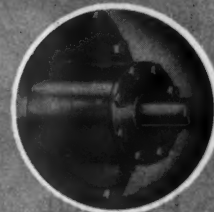
### 14 MODELS FOR EVERY TYPE OF SERVICE

You can select a Smith Pump exactly suited to your needs and enjoy the profits from economical tailor-made service. Every job, from fast filling of 20 lb. trailer bottles to loading and unloading transports in record time, may be handled.

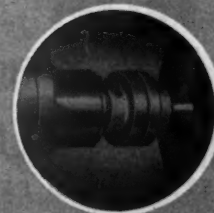
**THE BALANCED PUMPING PRINCIPLE** employed in Smith Pumps assures you of savings through long, trouble-free operation.



**SELF ADJUSTING PACKING** This exclusive Smith Precision leakproof packing requires neither servicing nor lubrication of any kind.



**DIRECT CONNECTING TO DRIVER** eliminates the necessity for outside gears, chains, or belts for both electric motor and truck power take-off drive.



The savings effected by a Smith precision built pump will far outweigh the false economy of less expensive equipment.

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Complete information may be obtained from the National Committee for L. P. Gas Promotion, 11 S. La Salle St., Chicago 3, Ill.

### Symposium on LPG Testing Scheduled for St. Louis

A symposium on "Methods for Testing Liquefied Petroleum Gases," jointly sponsored by committees of the American Society for Testing Materials, Natural Gasoline Association of America, and California Natural Gasoline Association will be held

Sept. 27-28 at the Statler Hotel, St. Louis, Mo.

The program will consist of papers on all phases of L. P. gas testing. Although reports from consumer groups and industry material on field tests will be particularly solicited, there will be a place on the agenda for any paper describing a test method, however simple, if it yields significant information.

Abstracts, authors and titles of proposed papers should be submitted prior to March 15, and the Program Committee should have a draft of the

proposed paper before June 1.

Anyone having a paper to contribute, or desiring more information should contact B. J. Heinrich, Phillips Petroleum Co., Bartlesville, Okla., chairman of the committee.



### CALENDAR

*All associations are invited to send in dates of their forthcoming meetings for this calendar.*

1954

### MARCH

**March 15**—Southeastern Gas Association Short Course in Gas Technology. North Carolina State College, Raleigh, N. C.

**Mar. 15-17**—Midwest Gas Association. Annual meeting. Fort Des Moines Hotel, Des Moines, Iowa.

**Mar. 22-24**—LPGA Southeastern District. Annual convention. Atlanta-Biltmore Hotel, Atlanta, Ga.

**Mar. 25-26**—Illinois LPGA Spring Convention. St. Nicholas Hotel, Springfield, Ill.

### APRIL

**April 5-7**—Nebraska Liquefied Petroleum Gas Dealers Association. Annual convention and trade show. Fontenelle Hotel, Omaha.

**April 9-10**—Western Liquid Gas Association. Annual meeting and trade show. Palace Hotel, San Francisco.

**April 12-13**—Montana LPGA. Annual convention, Hotel Florence, Missoula.

**April 14-16**—National Petroleum Association. Semi-annual meeting. Cleveland Hotel, Cleveland, Ohio.

**April 21-23**—NGAA 33rd Annual Convention, Baker Hotel, Dallas, Tex.

**April 22-23**—South Dakota LPGA Annual Convention. Marvin Hughitt Hotel, Huron.

**April 25-27**—Mississippi LPGA. Annual Convention. Edgewater Park Hotel, Edgewater Park.

**April 26-28**—Midwest Regional Gas Sales Conference. Edgewater Beach Hotel, Chicago, Ill.

### MAY

**May 9-12**—LPGA annual convention and trade show. Conrad Hilton Hotel, Chicago.

**May 19-21**—Gas Appliance Manufacturers Association. Annual meeting. Drake Hotel, Chicago.

**May 23-25**—Butane-Propane Institute (annual meeting). Roosevelt Hotel, New Orleans, La.

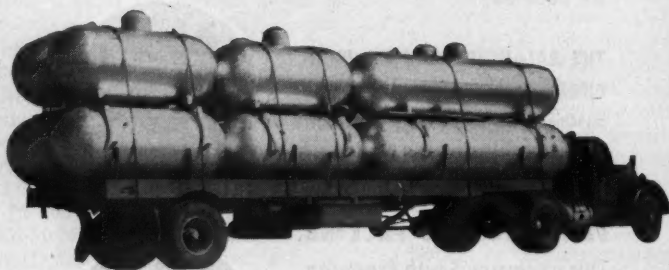
**May 24-25**—Utah LPGA. Annual convention, Hotel Newhouse, Salt Lake City.

### JUNE

**June 6-8**—Arkansas Butane Dealers Assn. Annual Convention.

**June 28-29**—Wyoming L. P. Gas Assn. Meeting. Townsend Hotel, Casper.

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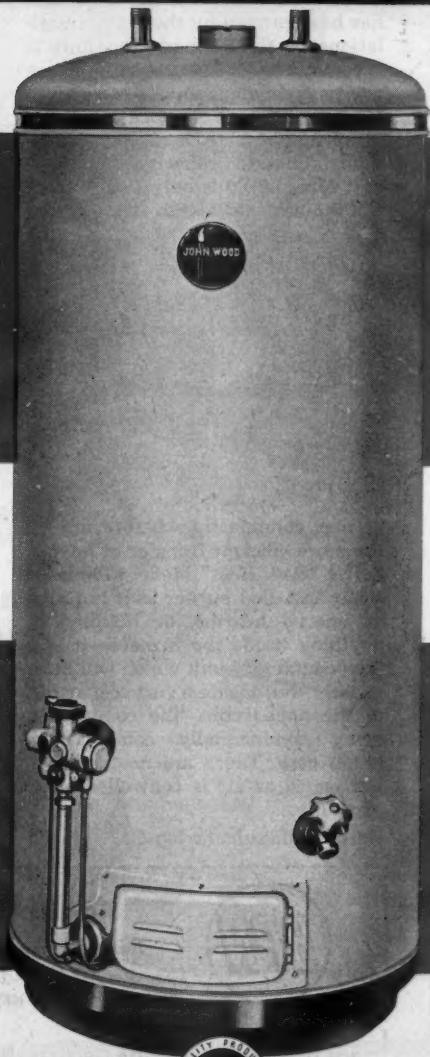
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both galvanized  
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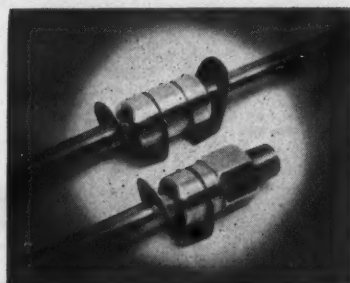


# Products and Trade Publications

## 1. Simplified Coupling

This new "Meca" coupling is designed especially to ease and simplify the process of connecting tubing or pipe in any size range and for any purpose. It is the essence of simplicity requiring absolutely no threading, flares, ferrules, or tools of any kind to make the connection. In a matter of seconds the most inexperienced can connect the tubing or pipe into a sealed connection able to withstand extremely high pressures. Press the spring clip, insert the tube, release the spring and that's all there is to do. Absolutely no wrenches are required, which results in labor saving.

The Meca coupling will be available in all sizes to fit the needs of all



industries and applications. It will also be available in different types of materials and designed with special O-rings for any type of liquid, gases or temperatures. It is built to withstand severe tests and provide leak-proof performance. The O-rings in the coupling can be by specification applied to high or low pressure uses. Available also as tees, elbows and connectors with a threaded end and hexagon outside for connecting into present equipment.

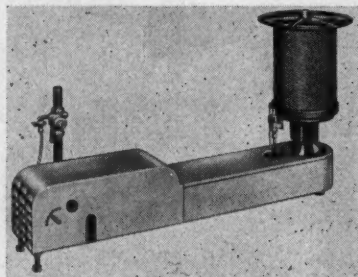
*The Master Enterprise Corp.  
of America*

## 2. Conversion Gas Burner

The revolutionary Burdett Model 2700 "Radi-Heat" conversion gas burner has proved that, contrary to general belief, L. P. gas can be used economically for central home heat-

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ing systems, if burned in a highly efficient conversion burner. This fact has been proven by the many installations of the burner. The unit is recommended for use in homes where a usual gas input of 100,000 to 125,000 Btu input is indicated for the usual upshot blue flame burner. Although the rated capacity of the Burdett Model 2700 is only 115,000 Btu, this input is sufficient to give equal or



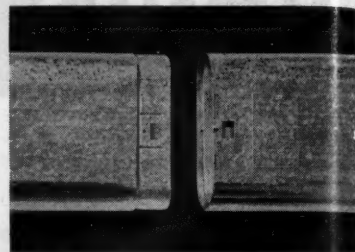
greater comfort than before due to the more efficient transfer of heat.

The "Radi-Heat" Model 2700 is an easily installed burner as it requires no special hearths, or building of anything inside the furnace—it is a "self-contained" unit which will burn equally well inside a furnace, or out in the open room—the combustion being commercially complete in either case. There are no fussy adjustments, as air is controlled automatically.

*Burdett Manufacturing Co.*

## 3. Gas Vent Pipe

A new gas vent pipe designed especially for "in-the-wall" venting has been announced by the Metalbestos Division, William Wallace Co. Called "WV (Wall Vent) Metalbestos," the pipe has a narrow, oval cross-section permitting easy installation inside a wall without extensive special construction or extra insulation. The new vent features an inner



and outer pipe separated by an insulating air space. A new "Fastloc" coupler enables pipe sections to be joined without cement or mastic, and without screws except where the vent will be left exposed in rooms or attics. The outer pipe is galvanized steel which, the manufacturer states, greatly lessens the chance of accidentally damaging the vent during handling and installation. Aluminum is used for the inner pipe to provide a fast-heating inner "hot stack" and to give maximum corrosion resistance.

*Metalbestos Division,  
William Wallace Co.*

## 4. Circuit Breaker

A complete new line of explosion-proof, dust-tight, rain-tight circuit breaker, motor starter, and line starter combination enclosures has been announced by the Appleton Electric Co., Chicago. The enclosures carry U. L. approval, and, with a new U. L. approved sealing "Unilet," may



## READERS' SERVICE COUPON

Just fill in this coupon for Products information and copies of new publications, and mail to

BUTANE-PROPANE NEWS, 198 S. Alvarado St., Los Angeles 57, Calif.

3/54 Fill in numbers of  
items in which you are  
interested.

No. \_\_\_\_\_ No. \_\_\_\_\_ No. \_\_\_\_\_ No. \_\_\_\_\_  
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NAME AND TITLE \_\_\_\_\_

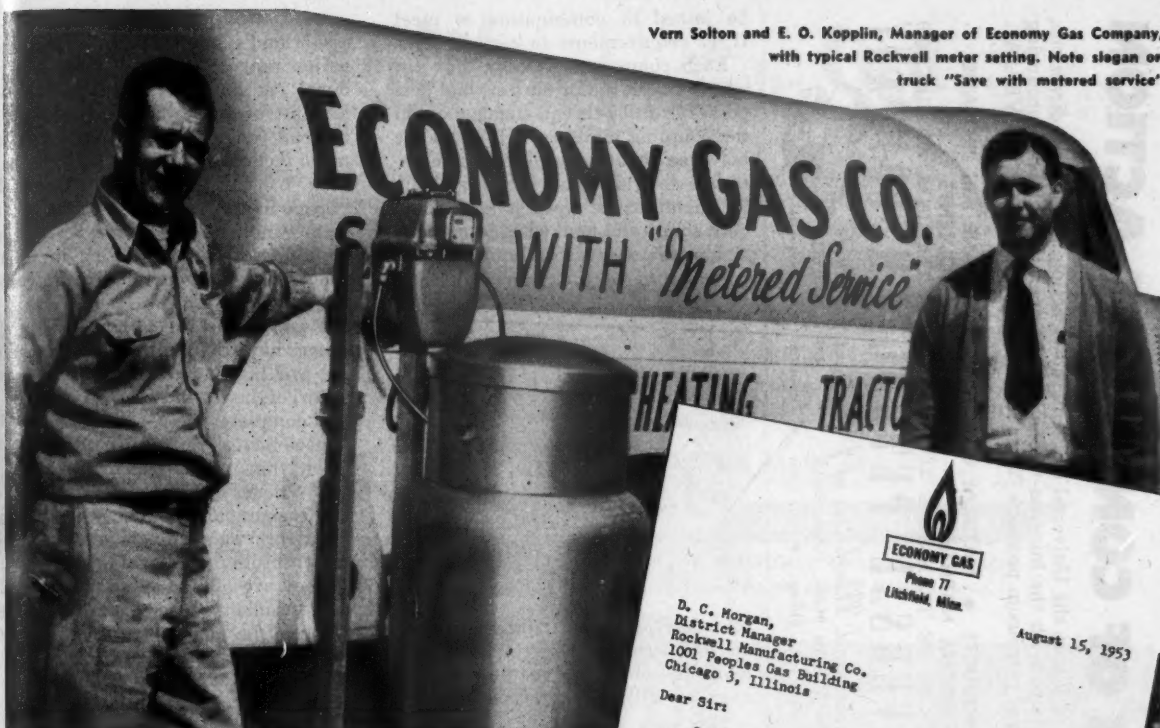
FIRM'S NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_



Vern Solton and E. O. Kopplin, Manager of Economy Gas Company,  
with typical Rockwell meter setting. Note slogan on  
truck "Save with metered service"



"We are using  
**ROCKWELL**  
**LP-Gas Meters**  
and have been  
**WELL SATISFIED**  
with them"

So says E. O. Kopplin, who has built his business around metered service. His letter tells the story of meter advantages in a nutshell . . . and it voices approval of the one meter especially designed for LP-gas.

Lloyd Peterson, Economy Gas Company employee, checks reading on Rockwell LP-gas meter.

Our company specializes in Metered Service and with the exception of those accounts which are withdrawing liquid for carburetion, our customers are almost 100% on meters. Metered Service offers many advantages to our customers -- never running out of fuel -- no ordering of bottles -- positive assurance that they get everything they pay for.

We are using Rockwell #150 meters and have been well satisfied with them. They are very attractive, lightweight, easy to install and have quite a large capacity for a small meter.

Yours truly,  
ECONOMY GAS COMPANY

*E. O. Kopplin*  
E. O. Kopplin

You, too, will measure better, serve better and profit more when you turn to Rockwell LP-gas meters. Let these little meters do a big job for you. Get full facts today. Write for catalog and price list.

YOU CAN RELY



ON ROCKWELL

**ROCKWELL**  
MANUFACTURING COMPANY

PITTSBURGH 8, PA. Atlanta Boston Chicago Houston Los Angeles  
New York N. Kansas City Philadelphia San Francisco Seattle Tokyo  
In Canada: Petro-Canada Limited





# THE SIGN OF CONSTANT ACTION

Like the Sign of Pisces, the Universal emblem shows action in varying directions, an ability to move with the business tide in a dual operation of both producing and marketing of petroleum products. Your source in our universe is UNIVERSAL.

REFINED PRODUCTS • NATURAL GASOLINE • BUTANE and PROPANE  
SPECIAL NAPHTHAS • LUBE OILS and SOLVENTS

CARGO, TANK CAR OR TRANSPORT LOADS • WATER TERMINAL AT CHICAGO

UNIVERSAL PETROLEUM COMPANY

Producers and Marketers of Petroleum Products

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REGIONAL OFFICES: Casper • Billings • St. Louis • Houston • Albuquerque



Cable: UNIFUELS

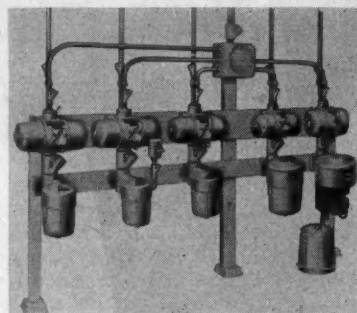


PISCES - The Fishes

Feb. 19 to March 20 - PISCES - Looking for new channels to exercise ingenuity, action in the changing tides.

be joined in combination to meet U. L. requirements in certain sizes.

Each component "Unilet" for circuit breaker, motor starter, and seal possesses full 7-thread engagement at the coupling joints as well as on the bolt-free covers. Absolutely safe entrance to individual motor starters for maintenance work is assured in both single and banked combinations in hazardous areas without shutting



off other branch circuits. No "live" circuit breaker wires are exposed while the motor starter enclosure is open on a line starter combination.

This new Appleton "Unilet" line covers all breaker-starter control equipment of leading firms rated to 225-ampere breaker loads and to 100 H.P. on 3-phase induction motors at 600 volts maximum.  
Appleton Electric Co.

## 5. Space Saver Range

Crowded commercial cooking installations are promised relief by the announcement here of a new line of Garland "Space Saver" ranges, according to Paul Inskeep, director of

sales, Detroit-Michigan Stove Co.

Garland's new "Space Saver" 36 series ranges are only 35 1/4 inches deep, yet have virtually the same amount of workable space as commercial ranges with as much as six more inches of depth.

In battery formation, Garland "Space Saver" ranges save over 1,000 square inches of profitable, workable area. Picture shows saving in floor space indicated by white line in front of range.

Most important, "Space Saver" ranges have the same cooking capacities and high degree of performance as larger, heavy-duty installations.

A complete line, Garland gas-fired "Space Saver" ranges are offered in: Open top; "Equa-Therm" hot top; "Uni-Therm" fry top; side firing broilers; roasting and baking ovens; deep fat fryers; salamanders, and combination broilers and griddles.

They are offered in stainless steel and standard black-Japan finishes and may be manifolded into battery with other 36 series units.

Detroit-Michigan Stove Co.

## 6. Air Conditioner

A versatile year-round air conditioner will soon be manufactured at the Permaglas Division of A. O. Smith Corp. It will be on the market in limited quantities in May.

The combination heating-cooling unit in one package will be housed by A. O. Smith in a modification of its present warm air furnace line, compactly measuring only 42 inches wide by 29 inches deep by 70 inches high.

The 8.4 sq. ft. of floor space this unit will occupy is considerably less





# Puts the "Sell" in heater Selection

Model 2EC is a throttling-type heat control with adjustable bypass set at the time of installation to maintain a minimum flame over the main burner at all times. It assures a more even distribution of heat and continuous air circulation that helps overcome the "cold 70". It is equipped with thermo-electric automatic pilot that automatically releases to provide 100% shutoff should pilot failure ever occur.

Here is a Control that offers you distinctive sales features incorporated in a unit known for its dependable performance. Here, too, is a Control made by *Robertshaw®*, a name known to millions because of a consistent national advertising program... and recognized by homeowners because of years of dependable service performed by millions of other *Robertshaw* controlled appliances everywhere in America.

Select the control  
that helps you sell



**Robertshaw-Fulton**

CONTROLS COMPANY

ROBERTSHAW THERMOSTAT DIVISION  
YOUNGWOOD, PENNSYLVANIA







than most competitive units of equal heating and cooling capacity, according to the manufacturer.

The air conditioner and furnace combination will be available in either gas or oil-fired models and with either two or three ton cooling capacities.

*Permaglas Division,  
A. O. Smith Corp.*

#### 7. "Window" Range

The periscope principle has been adapted to a new range just announced by O'Keefe & Merritt. The

new feature appears for the first time in the "Hi-Vue Model 535" which is in the deluxe price class.

The "Hi-Vue" window, conven-

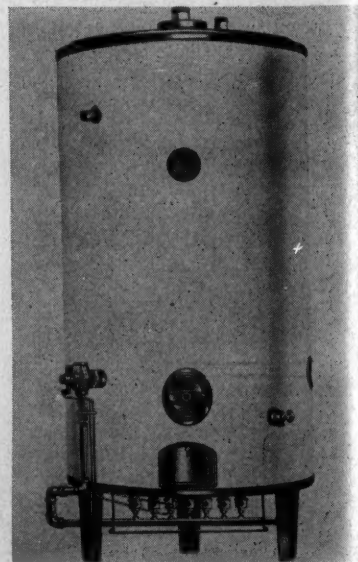


ently located in the backguard of the range, allows the busy homemaker to check her baking at a glance, with no need to stoop and squint, no pause to open the oven door. Pilot models of the new range have been demonstrated at home shows and exhibits and have won enthusiastic acceptance by dealers and customers.

*O'Keefe & Merritt*

#### 8. Water Heater

The General Water Heater Corp. has devoted considerable research and engineering to the perfection of its new "Hi-Rate" line of heavy duty water heaters. The "Hi-Rate" pro-



BUTANE-PROPANE News

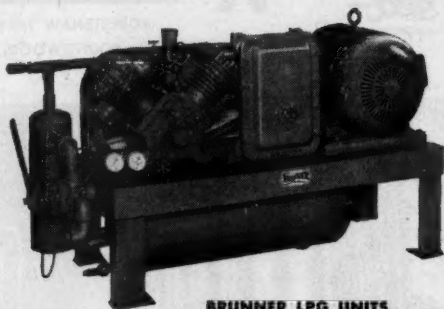
## How much will YOU save?



...with a



### LP GAS TRANSFER UNIT



**BRUNNER LPG UNITS**  
are available in 5, 7½ and  
10 H.P. models — easy to  
install, easy to service.

In bulk plants all over the country, operators report very sizeable gallonage savings with the use of Brunner LPG Transfer Units. The secret, of course, is that the Brunner Unit not only quickly transfers all liquid to the storage tank — but also removes and liquefies gas vapors in the tank car. With a simple turn of a valve, residual vapors in the tank car are removed down to recommended pressures of 15 to 20 lbs. per square inch. **PAYS FOR ITSELF** . . . the savings in time and gallons (up to 540 gallons from a 10,000-gallon tank car) soon pay for your Brunner Transfer Unit — keep on paying big dividends every time you use it.



**WRITE FOR FREE BOOKLET** that shows how to set up a highly efficient "tank car to storage" transfer system — describes the many safety and long life features found in Brunner LPG Units.

**BRUNNER MANUFACTURING COMPANY**  
Dept. E-34, UTICA, N.Y., U.S.A.

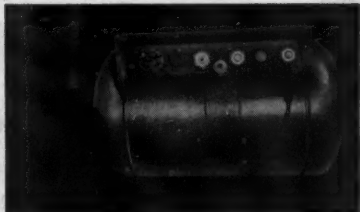
The Brunner Co., Gainesville, Ga.  
In Canada: Brunner Corp. (Canada) Ltd., Toronto, Ont.

# BRUNNER

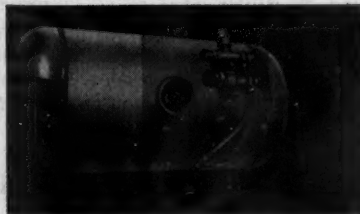
... the name to look for on  
**INDUSTRIAL  
GAS COMPRESSORS**



**Your Customers Get  
BETTER, SAFER, EASIER-TO-USE LPG FUEL TANKS  
with NEW  
S and L TANK ADAPTERS...**



Old method of attaching necessary fittings. Note area taken up.



New method featuring S and L Adapter in Manchester installation for factory-type 37 gallon LPG fuel tank. Note accessibility of fittings... small amount of area consumed. Connections easy to make. Also note cleanliness of rotary gauge installation using S and L Recess Rotary Gauge Adapter.

Whether it's a motor, domestic or storage fuel tank, S and L Forged Steel Tank Adapters give LPG tank users the features they want. That's why S and L Forged Steel Tank Adapters are popular with fabricators and dealers alike.

**Here's Why S and L Tank Adapters Mean More Sales, More Profits, More Satisfied Customers for You.**

**Maximum Safety Protection For All Fittings** — Fill and return valves, pressure relief, fixed liquid level gauge outlet, and liquid and vapor withdrawal valves arranged in one compact unit. Less chance for break-off accidents. Fittings are stronger, not strung out.

**Tanks Easier To Fill, Safer To Use** — S and L Tank Adapters are drilled and tapped on a natural 7 degree angle. This permits greater freedom and easier installation of liquid and vapor connections. Hazards from over-extended and complicated carburetor connections eliminated.

**S and L Adapters Easy To Install** — Fabricator needs to cut only one hole in tank. Only one weld needed to install adapter. Fittings do not come into contact with welding heat. Your customers get neater, more attractive-looking tank.

**Made To Exacting Standards** — Adapters conform to NBFU Pamphlet No. 58. Forged from top quality steel. All outlets accurately machined and threaded to NPT Standards.

S and L Tank Adapters Available for Every LPG Tractor or Truck Conversion.

NEW FREE CATALOG. WRITE TODAY!



**MANUFACTURING COMPANY**  
1450 W. 174th Street • Gardena, California

SERVING THE NEEDS OF THE LPG INDUSTRY



vides the desired combination of large storage, extremely high reheat capacities, and unlimited adaptability to any size or type of commercial operation.

The "Hi-Rate" can be operated independently or in multiple installations without the use of a separate storage tank. This is ideal for motels, apartments, restaurants, etc., where space and costs are important factors.

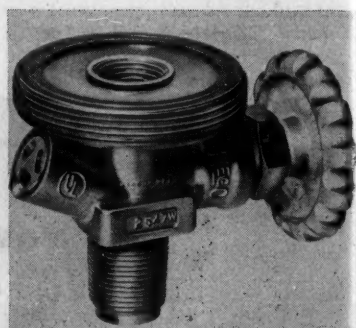
The companion "Big-4 Boosters" supply 180° water instantly for dishwashing, or when hooked-up with storage tanks is unlimited in capacity and flexibility.

To help with the selling and installation of the "Hi-Rate," General has just released an attractive informative folder which gives construction features, specifications and provides detailed "do's" and "don'ts" to assure satisfactory installation and performance.

*General Water Heater*

## 9. Plumbers' Pot Valve

The Bastian-Blessing Co. announces the manufacture of a new Rego plumbers' pot valve, No. 2547W, designed for installation on any port-



able L. P. gas cylinder used to furnish fuel for a plumber's pot burner. The burner can be attached to the valve top by a POL connection and a three-inch thread on the outer valve top permits attachment of a tripod to support the lead pot. Incorporated in the new item is a safety relief valve, adequate for cylinders up to 100 pounds of propane capacity.

The No. 2547W, recommended by the manufacturer, has a wheel handle shut-off which provides a positive means of extending the valve life.

For replacement purposes where the cylinder collar opening is not large enough for the handwheel type, the No. 2547 valve is available, identical to the other valve except that the wheel handle is omitted to provide for wrench operation.

*Bastian-Blessing Co.*

## 10. Gas Cooling Unit

Newest addition to the Servel air conditioning line is a direct-fired 2-ton gas-operated cooling unit that can be connected to forced-air gas furnaces to provide all-season comfort. It requires only 8.7 sq. ft. of floor space, is small enough to go through a 30-in. door, and is engineered for easy installation with existing duct systems. The unit's refrigeration system is of the gas absorption type, which has no moving parts and no noisy vibration.

*Servel, Inc.*

## Product Information

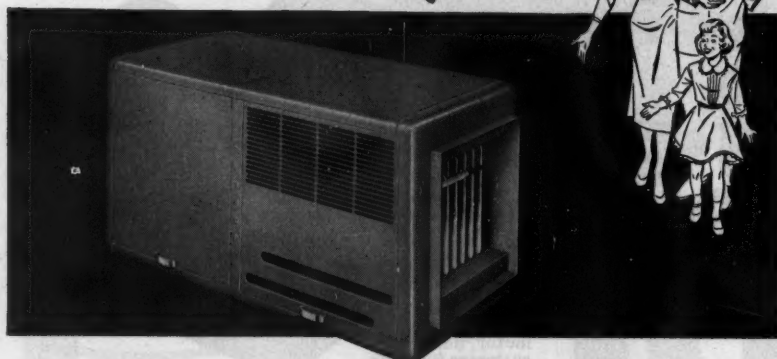
### 11. Catalog Supplement Issued

A new supplement to the regular catalog has just been published by the E. F. Griffith Co. Included in the supplement are many new items and tools used in the servicing of appliances which are now available from the Griffith Co.

Copies of the supplement or of the complete catalog are available on request.

*E. F. Griffith Co.*

# Appliance Styling



## makes the REZNOR PAC ideal for living area installations

Reznor's gas-fired PAC (for Packaged Automatic Comfort) is so compact it will fit into the most out-of-the-way corner, yet so smartly styled that it doesn't need to be hidden. As a suspended unit in utility room, recreation room, or even in the kitchen, the PAC's trim styling makes it as completely in good taste as any other home appliance.

Available in 75, 100 and 125 thousand BTU models, the PAC is ideally suited for crawl space, attic and all other horizontal furnace applications. But the PAC is the *only* horizontal furnace with the appliance styling which makes possible installation at the most

practical point in the home, regardless of other plans for the same area.

The PAC is just the furnace many small home owners have been waiting for. Don't miss this opportunity to cash in.

Used without ducts, the PAC is a deluxe unit heater which meets the most exacting demands for cleanliness, quietness, and fine appearance. But for most of your unit heater jobs, the standard Reznor line of suspended models will fit the bill perfectly.

Write today for more details—ask for Bulletin GNP-52 on the PAC or Catalog GN-53 on the complete line. The Reznor Manufacturing Company, 4 Union Street, Mercer, Pa.



REZNOR SUSPENDED  
MODELS . . .  
8 sizes — 25 to  
200 thousand BTU





From California  
to Florida...

# Dealers are learning that you can't beat American "Better-Bilt" LP Trucks and Transports!

Read what this Satisfied User  
Says about AMERICAN  
"Better-Bilt" Delivery Trucks

"I have seen a lot of tank trucks,  
but I have yet to see one as well  
constructed as yours. The extra  
middle saddle, the heavy skirting  
and rear domes, and the piping  
design are certainly superior to  
most of the tank units on the mar-  
ket, regardless of price. Consider-  
ing that we bought on a price basis,  
not aware of these differences, we  
consider ourselves very fortunate  
that you had the best price."

C. E. Bosserman  
Metergas Service  
Maitland, Florida



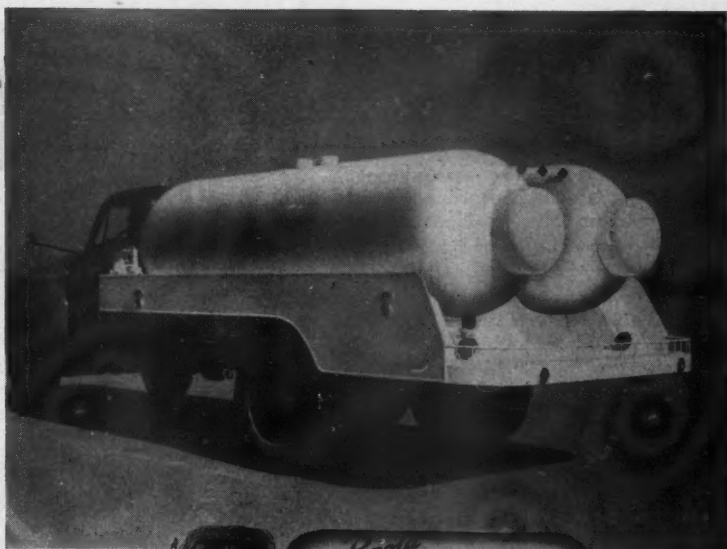
Next time you're in Dallas be  
sure to visit our modern new  
plant and air-conditioned  
offices on West Commerce.  
You're always welcome!



AMERICAN SALES, INC., National Sales Agents for

## American TANK & MFG. CO.

DALLAS, TEXAS—2136 W. Commerce • P. O. Box 5525 • Phone RI-9183  
JACKSON, MISS.—P. O. Box 2563 • Phone 3-8726  
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### Compare Features! Compare Prices! See why Dealers Prefer American "Better-Bilt" Tanks!

American "Better-Bilt" tanks are made of  
new high-tensile steel and are EXTRA LIGHT  
WEIGHT. This means bigger pay-loads. We  
use high-flow style piping, which greatly  
increases the delivery of LP gas. The conven-  
ience and safety of the driver is of vital concern  
to us. Main shut-off valves are controlled from  
the driver-side of the truck. Two roomy cabinets  
are streamlined into rear of truck. Every tank  
is custom-balanced to the truck it's built for.  
These are just a few of the many advantages  
available to you at no extra cost in an Amer-  
ican "Better-Bilt" delivery unit.

Write for our low  
prices on complete  
assemblies — from  
1250 to 2000  
water-gallon size,  
set on your truck,  
piped — ready for  
service.

Also available at  
new lower costs:  
new 1954 Fords,  
GMC's, Chevrolets,  
Dodges and Inter-  
national trucks for  
delivery-tank-  
mounting. Prices  
quoted on request.

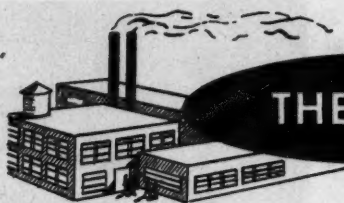


## Rockwell Manufacturing Co.

Rockwell Manufacturing Co. recently announced the following promotions:

William T. Kiehl, Jr., DuBois, general manager of the Pittsburgh-DuBois Division, which operates three gas meter plants in DuBois and near-by Sykesville, has been named assistant to the executive vice president. W. M. Connor, succeeds him as general manager. Connor was formerly general manager of the company's Macnick Division, Tulsa, Okla.

Earl Hudson, production manager at DuBois, has been named assistant general manager of that division.



## American Tank and Manufacturing Co.

James F. Jolley has been appointed regional manager of American Sales, Inc., national sales agents for Ameri-

can Tank and Manufacturing Co., Dallas.

Ben Terry has been made sales representative at Jackson, Miss., where Mr. Jolley will make his headquarters. Well known in this area, having covered the same territory for Squibb-Taylor, Inc., Mr. Terry previously operated his own L. P. gas business at Marx, Miss.

D. W. Scoggins, of American Tank and Manufacturing Co., announces the appointment of Louis Sines as comptroller and office manager.

## Pressed Steel Tank Co.

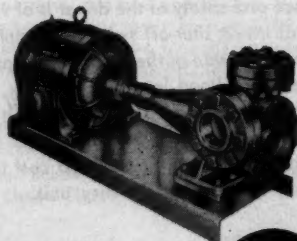
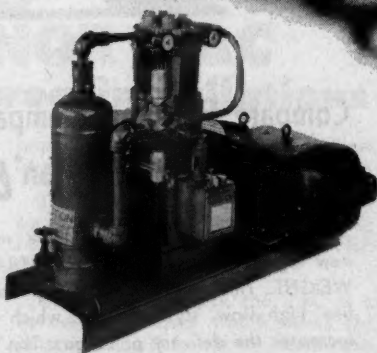
N. A. Evans, vice president in charge of sales for Pressed Steel Tank Co., Milwaukee, recently announced the appointment of Edward Elliott, Jr., as manager of cylinder sales and Ross H. Dean as manager

# WE LIKE SOFT JOBS BUT WE'LL TAKE THE TOUGH ONES TOO!

Most pumping jobs in the LPG industry are easy for Corken pumps. In fact, just about the only hard jobs we ever find, become easy as pie when the principles of good LPG engineering are applied.

Summer or winter, on big jobs and little ones, Corken pumps and compressors are fast, smooth, economical and efficient. Even for such supposedly impossible jobs as moving LPG from an underground tank with a liquid pump, Corken has a way.

Whatever your problem, we'll be glad to help you tackle it.



# CORKEN'S inc.

208 E. Grand Oklahoma City, Okla. RE 6-6518  
EASTERN OFFICE: 916 PUTNAM AVE., PLAINFIELD, N. J. PHONE PL 7-1305

Corken  
Good  
Pumps



Edward Elliott, Jr.



Ross H. Dean

of special products sales.

Elliott will devote his time to sales of Hackney L. P. gas cylinders, compressed gas cylinders and L. P. gas systems. Dean will be responsible for sales of Hackney L. P. gas fuel tanks, paint spray containers and air receivers.

## Tappan Stove Co.

Donald E. Fatkin has been appointed territory manager for the Tappan Stove Co., A. B. Ritzenthaler, vice president in charge of sales, announced.

Mr. Fatkin will manage the Virginia sales territory. He joined Tappan's credit department in 1950, served as field service representative in 1952 and was transferred to the sales department early last year.



# Your sales are our business, too!



Whether you're selling patented Mix-O-Gas Systems, Delta Performance Tested Systems or Delta Guardian Cylinders, we're planning and working all the time to increase your sales.

Delta not only puts the finest in design, materials and workmanship into every Delta-built product for you, but to help you sell, we also offer you the strongest kind of advertising support and planned promotions.

Your sales and profits are our business, too. You'll find your Delta Sales Representative a trained specialist, ready and willing to help you increase them.

## THESE ARE JUST A FEW OF THE MANY SALES HELPS DELTA HAS FOR YOU!

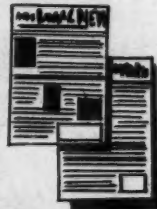
### ● 5,951,264 FARM PUBLICATION READERS

Striking advertisements in Arkansas Farmer, Mississippi Farmer, Progressive Farmer, Kansas Farmer, Missouri Ruralist, Prairie Farmer, and The Farmer, help create sales for you.



### ● 12% RETURN FROM DIRECT MAIL

More than 14,000 pot holders were shipped to prospects interested by direct mail.



### ● SPECIAL PROMOTION KITS FOR YOU

Complete plans for successful sales campaigns are furnished you regularly to help build sales.



## DELTA TANK MANUFACTURING CO., INC.

P. O. BOX 1369, BATON ROUGE, LA. • P. O. BOX 1091, MACON, GA. • P. O. BOX 431, JEFFERSONVILLE, IND.  
Export Office, Suite 110, International Trade Mart, New Orleans, U. S. A.  
MANUFACTURERS OF LPG PRESSURE TANKS AND I. C. C. CYLINDERS



### Dixie Products Inc.

Robert B. Hurt, well known stove industry executive, connected with Hardwick Stove Co. for 37 years, has been appointed director of research of Dixie Products Inc., Cleveland, Tenn., according to S. B. Rymer, Jr., president.

### Calcinator Corp.

Miss Bea Lawson Miller has been appointed director of consumer services of the Calcinator Corp., Bay City, Mich.

### American Car and Foundry Co.

The American Car and Foundry Co. has appointed Charles C. Gallicano assistant to the president, Charles J. Hardy, Jr.

He entered ACF employ in 1948 as production control and scheduling assistant; in May 1949, he was appointed administrative assistant in the president's office. The following changes in the Western sales area of the company were announced: John H. Van Moss, western sales manager at Chicago who, at the request of ACF, has remained two years beyond



C. C. Gallicano



J. H. Van Moss



E. B. Carpenter



J. E. Angst

normal retirement age, became sales consultant for the Western territory with headquarters in Chicago.

Ellsworth B. Carpenter, district sales manager at St. Louis, was appointed western sales manager at that point, with jurisdiction over the Chicago, St. Louis and San Francisco sales offices.

John E. Angst, assistant western sales manager, was named district sales manager at Chicago.

### Pennsylvania & Southern Gas Co.



Paul E. Quinn

Paul E. Quinn has been appointed manager of the Elizabeth and Suburban Gas Co. of Elizabeth City, N. C., which is a subsidiary of Pennsylvania and Southern Gas Co. of Westfield, N. J.

### Robertshaw-Fulton Controls Co.

Now under construction in suburban Los Angeles is the new \$500,000 plant of the Anaheim Div. of Robertshaw-Fulton Controls Co. One of seven Robertshaw manufacturing divisions, Anaheim is the only one devoted entirely to defense production. It is engaged in the manufacture of electronic, electro-mechanical, hydraulic and pneumatic components for aircraft, guided missiles, and fire-control systems.

## PICKUP MOTOR FUEL TANK WITH THE BONUS OUTLET

This specially designed tank can be installed in any model pickup in FIFTEEN MINUTES. The Bonus Outlet permits simple hookup for weed burners, branding irons and camp stoves without disconnecting a single valve.



All of the production facilities of the Western Tank & Steel Corp. are devoted to the manufacture of custom-tractor and motor fuel tanks. Because they are a main-line and not a sideline, you can rightfully expect a product with superior quality and extra features, such as the bonus outlet. Write for further information and prices today.

Regional distributorships are still available in some areas.

## WESTERN TANK & STEEL CORP.

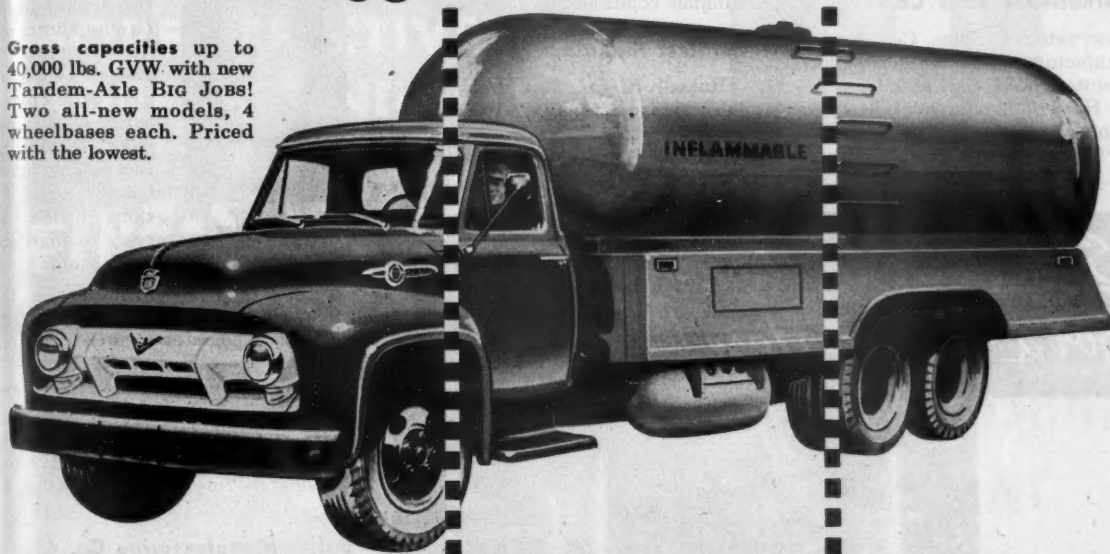
Phone 5-7517 P. O. Box 1013 Lubbock, Texas



# TRIPLE ECONOMY

## *It's the biggest truck news of '54*

Gross capacities up to 40,000 lbs. GVW with new Tandem-Axle Big Jobs! Two all-new models, 4 wheelbases each. Priced with the lowest.

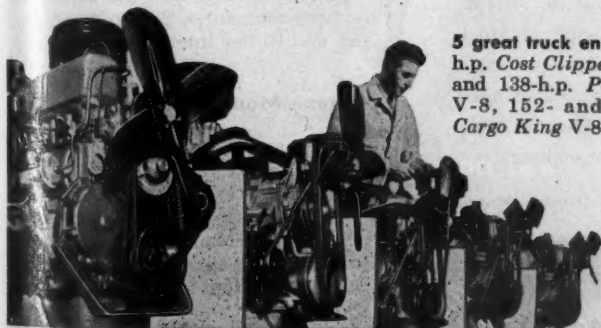


- 1. NEW LOW-FRICTION ENGINES** offer power increases up to 23% with *gas-saving economy!* One reason: modern short-stroke design cuts down on internal friction waste as much as 33%!
- 2. NEW 3-MAN DRIVERIZED CABS** cut fatigue. New long-wearing woven plastic seat upholstery. Exclusive Ford seat shock snubbers! Huge one-piece windshield!
- 3. NEW CAPACITIES!** New Factory-Built 6-Wheelers, up to 60,000 lbs. GCW! Two new Cab Forward Big Jobs! Ford's 221 models offer low curb weights, top payloads!

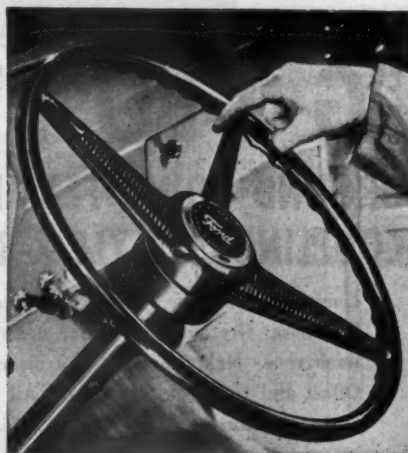
**Ford advances further with big new savings in all 3 vital truck areas! There's more gas-saving power! Still better drivers' working facilities! Big capacities, too!**

New Ford Trucks for '54 offer the mightiest concentration of power per cubic inch ever built into *any* truck engine line! And, smaller-displacement engines like Ford's five new truck powerplants normally need *less* gas! That's only *one* big factor behind Ford Truck *Triple Economy* for 1954.

For more information, write: Ford Division, Ford Motor Co., Dept. T-64, Box 658, Dearborn, Michigan—or call on your Ford Dealer, *today!*



**5 great truck engines:** 115-h.p. *Cost Clipper Six*, 130- and 138-h.p. *Power King V-8*, 152- and 170-h.p. *Cargo King V-8!*



**NEW Ford Master-Guide Power Steering** is standard on new Series T-800 and (with 152-h.p. V-8) T-700 Big Jobs; optional at worthwhile extra cost on most other Big Jobs. Cuts steering effort as much as 75%!

**ONLY FORD** gives you Gas-Saving, Low-FRICTION, High-Compression, Overhead-Valve, Deep-Block engines in *all* truck models! Advancements like rotating valves increase valve life, and full-flow oil filter lengthens engine life.

**FORD *TRIPLE ECONOMY* TRUCKS**  
MORE TRUCK FOR YOUR MONEY



### Worthington Corp.

The Worthington Corp., Harrison, N. J., recently honored Paul Diserens, consulting engineer, at a testimonial luncheon in the Essex Club upon the occasion of his retirement after 45 years.

### International Sales Co.

International Sales Co., furnace manufacturers, San Francisco, have appointed W. L. Kell as sales manager. He will handle sales with Jim Deane who with Charles E. Larson was recently made vice president.

### Magic Chef, Inc.

H. V. Floerke, former sales manager, has been named Central Heating sales manager with full responsibility for home conditioning operations. He will direct a team of heating specialists who will introduce Magic Chef's all new "Magic-aire" winter and summer conditioning units.

### Kerotest Manufacturing Co.

Russell H. Coe has been named sales manager for Steel Valve Sales according to an announcement by R. B. Tullis, president of Kerotest

Manufacturing Co., Pittsburgh, Penna. He was formerly a sales representative in the Pittsburgh area.

### The Weatherhead Co.



C. P. Kelsey

outside of the United States and Canada.

Kelsey was assistant production manager and later export manager. Before joining Weatherhead in 1947, he was vice president in charge of exports for Continental Corp.

He is a member of the American Marketing Association and the Cleveland World Trade Association.

### Butler Manufacturing Co.



H. A. Edlund

Edlund joined Butler in May 1952, and has been assistant general sales manager. In his new position he will direct sales efforts of all the Butler product divisions—oil equipment, steel buildings, farm and dry cleaning equipment, special products, and the sales subsidiary companies, Butler Pan-America and Butler International Co.

### Pyrene Manufacturing Co.

Maynard A. Laswell, vice president for many years of C.O.-Two Fire Equipment Co., has been also made vice president in charge of sales of the Pyrene Manufacturing Co., according to an announcement by S. R. Baker, president and chairman of the Board.

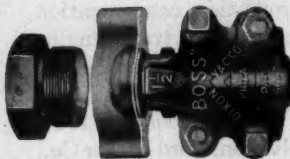
The affiliated companies have general offices and factories in Newark, New Jersey, and manufacture a complete line of approved fire ex-

*Safest Connections  
for L-P Gas Hose!*



# "G J-BOSS"

## GROUND JOINT FEMALE COUPLINGS—STYLE X-34



Unequalled for safe, durable, trouble-free connections on all L-P Gas hose. Ground joint union between stem and spud provides washerless, leakproof seal. Furnished with super-strong "Boss" Offset and Interlocking Clamps. All parts steel or malleable iron, thoroughly rustproofed. Sizes 1/4" to 6", inclusive. Also available in washer type, and with companion "Boss" Male Couplings.

Stocked by Manufacturers and Distributors of Industrial Rubber Products.

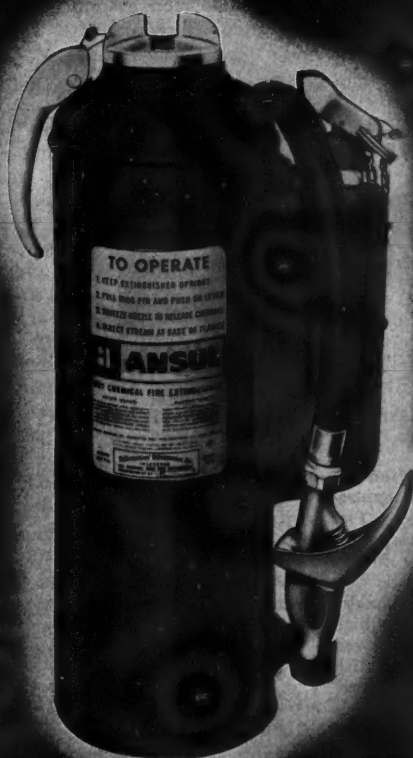
# DIXON Valve & Coupling Co.

GENERAL OFFICES & FACTORY—PHILADELPHIA 22, PA. BRANCHES—CHICAGO  
BIRMINGHAM • LOS ANGELES • HOUSTON • DIXON VALVE & COUPLING CO. LTD. TORONTO

ADDITIONAL BRANCHES IN NEW YORK, N.Y., PITTSBURGH, PA., PHOENIX, ARIZ., ST. LOUIS, MO., WASHINGTON, D.C.



**FASTER**  
**MORE EFFECTIVE...**  
**MORE DEPENDABLE**  
**FIRE-STOPPING**  
**POWER**

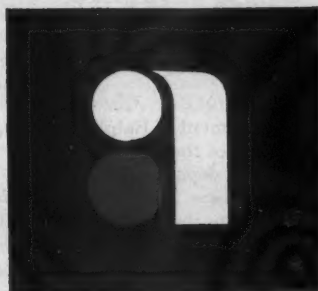


MODEL 20-B



**ANSUL**  
*Chemical Company*

FIRE EQUIPMENT DIVISION • MARINETTE, WISCONSIN



## **ANSUL**

### **FIRE EXTINGUISHING EQUIPMENT**

**FASTER . . .** A short, quick downward motion of the puncture lever pressurizes the extinguisher and it is ready for instant use.

**MORE EFFECTIVE . . .** Even the inexperienced operator gets near-expert results because of the ease of operation and handling. In addition ANSUL "PLUS-FIFTY" Dry Chemical has greater fire-killing power.

**MORE DEPENDABLE . . .** Exclusive ANSUL-ENGINEERED design features include water-tight and corrosion-resistant construction, easy, on-the-spot recharge without special tools and other exclusive Ansul developments which insure greater dependability.

**FIRE-STOPPING POWER . . .** ANSUL FIRE EXTINGUISHERS have the highest ratings for fire-stopping power ever awarded any type of class B and C fire extinguishing equipment.



Send for File No. B-201. You will receive a variety of helpful printed matter. Included is our latest catalog which describes Ansul Extinguishers of all sizes — from the small Ansul Model 4 to Ansul Piped Systems and Ansul 2000 lb. Stationary Units.

OFFICES AND DISTRIBUTORS IN PRINCIPAL  
CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES

MANUFACTURERS OF  
DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT, REFRIGERATION  
PRODUCTS, INDUSTRIAL AND FINE CHEMICALS AND LIQUEFIED GASES



tinguishers, air foam playpipes, carbon dioxide and air foam fire extinguishing systems, as well as smoke and heat fire detecting systems.

#### International Harvester Co.

International Harvester Co. announces the appointment of Ralph M. Buzard as manager of the company's motor truck sales department. He succeeds W. K. Perkins, who will become staff assistant to the vice president, working on special assignments.

#### Ansul Chemical Co.

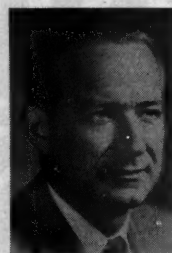
Richard M. Baker, Ansul Chemical Co., has been appointed advertising and sales promotion manager. He has served with the company six years as publicity manager.

#### Hamilton Manufacturing Co.

R. G. Halvorsen, vice president of Hamilton Manufacturing Co., Two Rivers, Wis., announced recently that C. W. Altmann has been appointed manager of the company's sales serv-

ice division. He was formerly sales manager of the company's nursery furniture division.

#### Robertshaw-Fulton Controls Co.



T. H. Jeffers

The Robertshaw-Fulton Control Co. has announced the appointment of Thomas H. Jeffers to the position of assistant general manager of the Anaheim division, Anaheim, Calif., and his election as an

assistant vice president of the company. T. T. Arden continues as general manager of the Anaheim division.

Appointment of Frank H. Post as sales manager in charge of all sales for the Robertshaw-Fulton Thermostat and American Thermostat Division has been announced by the parent company.

#### Detroit-Michigan Stove Co.



F. A. Kaiser

The Detroit-Michigan Stove Co. has announced the election of Fred A. Kaiser as executive vice president and a director of the company. He replaces Wendell L. Smith who has retired.

Vice president of the company since April 1948, he has been with Detroit-Michigan since 1931, when he started as a territory salesman.

Mr. Kaiser is widely known in the gas appliance industry and is a noted speaker on sales subjects. He is a director of GAMA, and a member of the Industrial and Commercial Research Committee of the American Gas Association.

#### Philco Corp.

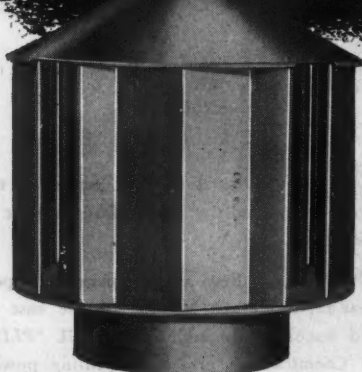
The Philco Corp. has acquired the assets of Dexter Co., Fairfield, Iowa, manufacturers of driers and washing machines, William Balderston, Philco president, and Tom B. Hunt, president of Dexter, announced.

This acquisition marks Philco's entry into the home laundry field, and the company plans to continue operation of Dexter Co. under present management as a separate unit.

### FIELD TESTS PROVE THE

## BREIDERT AIR-X-HAUSTER

(Pat. No. 2249428)



IS THE  
MOST EFFICIENT  
VENT FLUE CAP  
ON THE MARKET



**Safe, sure ventilation no matter which way the wind blows . . .** The Breidert represents a revolutionary, aerodynamically-correct principle in design that makes it especially suitable for venting gas heaters and other appliances. Properly installed, the Breidert cannot back-draft where there is no interior negative pressure! *In recent exhaustive tests by the U.S. Government, Breidert Air-X-Hausters out performed all other types of ventilators tested.*

**Reduces service to a minimum . . .** The Breidert is stationary, has no moving parts to jam or get out of order. Instead of exhausting soot and fumes downward as most conventional ventilators do, the Breidert vents to the sides. Thus, the flue stack and roof remain cleaner, and without discoloration.

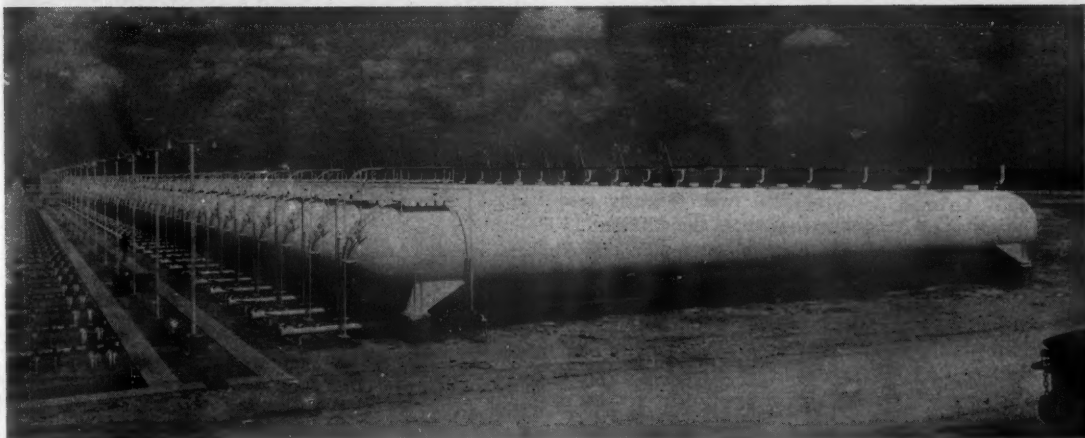
**A few words about cheaper caps . . .** You may buy lower cost vent caps than Breiderts, but the necessity for special service work to make them operate properly may cost you \$10 to \$25 additional.

**First with certified directional wind capacity ratings . . .** The Breidert ventilator offers certified capacity ratings based on tests made with wind blowing at all angles (as shown). These high capacities were proved and certified by Smith Emery Co., Pacific Coast branch of Pittsburgh Testing Laboratories. *Insist on certified ratings based on directional wind tests at various vertical angles as shown in considering any ventilator.*

**Send for literature and Installation Guide. No charge or obligation.**

**G. C. BREIDERT CO:** Dept. BP., P. O. BOX 1190, SAN FERNANDO, CALIF.  
REPRESENTATIVES IN PRINCIPAL CITIES OF THE U. S.





## Major Refiner Buys 65,000 Gallon LPG Storage Tanks From McNamar

This purchase of battery of large storage tanks by billion-dollar oil and refining company is proof that McNamar can supply any size LPG tank you want.

Whether it's a 115 gallon domestic system or a 6000 to 30,000 gallon storage tank, McNamar can always meet your requirements . . . for size . . . quality of workmanship . . . speed of delivery.

### ● Reasons Why Your Next Tanks Should Be McNAMAR'S



1. McNamar's are UL approved Tanks.
2. They meet all requirements of all states.
3. McNamar's are built under the new ASME code.
4. They also meet all requirements of the old ASME U-69 code.
5. McNamar's are X-rayed to meet the requirements of the new ASME code.



*f.i.t. rates apply on  
all shipments from  
McNamar.*

*Now! McNamar stands on its record of  
performance. When you buy McNamar,  
you've bought the best tank money can buy.*



**Anhydrous Ammonia Tanks Also Available in Standard Sizes**



**McNAMAR**  
**BOILER & TANK CO.**  
BOX 868 • TULSA, OKLAHOMA



## Servel, Inc.

Servel, Inc. announces that Allen E. Apple, manager of industrial relations, has been placed in charge of the activities of all departments of the personnel division at Servel, Inc. He assumes duties previously performed by F. W. Ortman, Jr., who resigned last week as vice president in charge of personnel to become industrial relations director of a company at New Holland, Pa.

H. R. Nielsen was promoted to manager of the air conditioning divi-

sion at Servel. He was formerly sales manager of this division.

## Mueller Climatrol

Lee Miles, cooling sales engineer for Mueller Climatrol, Milwaukee, was recently reappointed chairman of the Manual 11 Committee of the National Warm Air Heating and Air Conditioning Association. In addition, Miles was named a member of the NWAHA&ACA Educational Advisory Board Committee.

## Surface Combustion Corp.



Kent J. Black

Surface Combustion Corp. (Janitrol Division) has announced the appointment of Kent J. Black of Fremont, Ohio, as sales representative for Western Ohio. He replaces Edward Michalak

of Toledo who has been transferred to the Omaha office of Janitrol division. Black will work from the Toledo area under the direction of Richard B. Thornburgh, manager of the Columbus sales territory.

He joined the Janitrol sales force in August, 1953, after working with Ohio Fuel Gas Co. for 16 years as a heating and air conditioning specialist.

## American Radiator & Standard Sanitary Corp.

W. Walton Woodroof has been appointed manager of cooling sales of



W. W. Woodroof



H. E. Rossell, Jr.

the Sunbeam Air Conditioner Division of American Radiator & Standard Sanitary Corp., while Henry E. Rossell, Jr. has been named manager of dealer development of this division.

## Mine Safety Appliances Co.

William H. Gates has been appointed manager of the Southwest district of Mine Safety Appliances Co. Mr. Gates, formerly assistant manager of the district succeeds Harry W. Richards, Tulsa, who died Dec. 5.

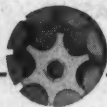
## Coleman Co., Inc.

The Coleman Co., Wichita, has named Douglas C. Albright works manager. He will direct and coordinate all phases of production and industrial engineering, manufacturing and quality control in the Wichita factories of the company.

# DOUBLE SEAL

## Invader PUMP

FOR LP-GAS SERVICE



HERE'S ANOTHER REASON why Invader pumps perform better... longer. Improved, rounded tooth design assures less "down" time, fewer replacements.

This new and improved Invader "Dual Seal" Pump has a double mechanical seal, double protection for bearings, and other advanced engineering features—including an extra large grease pocket packed with insoluble lubricant.

Thanks to the double mechanical seal, these pumps can't leak. The bearings are protected against water and dirt, assuring long, trouble-free operation.

Mounted on your trucks or installed in your bulk plant, Invader LP-Gas pumps will give you the kind of service you have always wanted!

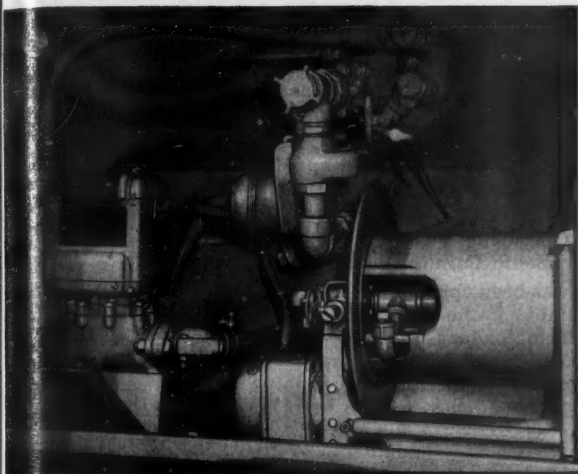
Write for Specifications, Dimensions and Prices

Invader  
PUMPS

The SCHIRMER-DORNBIRER PUMP Co.

1719 East 39th Street • Cleveland 14, Ohio





Illustrated is Butler L. P. Gas Truck Tank built for General Natural Gas Corp. of New York, and equipped with Hannay Hose Reel with Explosion-proof Electric Motor. Modern installations such as this are streamlining deliveries for LPG distributors everywhere.



# HANNAY HOSE REELS

**Proved and Approved by  
Leading LPG Distributors  
for Safe, Speedy, Superior Service**

**These Features of the  
HANNAY HOSE REEL  
with Explosion-Proof Motor  
Speed Up Deliveries, Cut Costs**

- Sturdy construction and simple operation reduce maintenance costs.
- Explosion-proof switch with easy push button control.
- Especially designed explosion-proof heavy duty motor, Underwriters approved.
- No gears to shift; no clutch to engage.
- Safe rewind speed, always under control.
- Rolled edges on disc, smooth spool . . . no scuffing, no damage to hose.
- Ball bearing Chiksan swing joint . . . does not carry weight of reel.

All over the nation, under all sorts of weather conditions, Hannay Hose Reels are helping LPG distributors make faster, more economical, safer deliveries. They reduce time at every stop, extend the life of expensive hose, eliminate mess and annoyance, keep delivery men happy.

The Hannay Hose Reel Model EPB with Explosion-proof Electric Motor and simple push button control is the most efficient reel made . . . the most completely satisfactory reel your money can buy. Manually operated models are also available. Ask your equipment jobber or write us for full information.

**HANNAY** First Name in HOSE REELS

**Power and Manually Operated  
Hose Reels for Every Purpose**



© 1953, C.B.H. & S., Inc.



**We need fittings QUICK! When can you ship 'em?**

**SPAN always ships quick...your order's going out IMMEDIATELY!**

**for fast service on...  
COPPER TUBE  
FITTINGS**

**Phone... Wire... or Write TODAY**

SPAN gives the fastest shipping service in the industry, because SPAN manufactures and stocks a huge inventory of Copper Tube Fittings. Write for catalog and price list of high quality flared fittings, compression fittings, and valves.

**SPAN**  
BRASS MFG. CO.  
800 WILSON STREET  
OTSEGO, MICHIGAN

*Mallinckrodt*  
**ETHYL  
MERCAPTAN**  
purified

it says LOOK OUT

- The accepted standard odorant for natural or liquefied petroleum gas — gives sure but harmless warning.
- Purified — Moisture-free — PROTECTS FIXTURES. Meets all 15 qualifications of National Bureau of Standards.



**MALLINCKRODT CHEMICAL WORKS**  
Mallinckrodt St., St. Louis 7, Mo.  
72 Gold St., New York 8, New York

**Scaife Co.**

The following personnel changes have been made by the Scaife Co., Oakmont, Pa.:

W. T. Bryson becomes sales supervisor of district 5 with headquarters in Atlanta. Dean Wagoner will continue to represent Scaife Co. in district 5 in the sale of gas cylinder products in North and South Carolina.

Frank F. Brown has been appointed a sales representative in the New York territory, working under G. J. Asbee, manager of district 2. M. F. Gier has been made cylinder specialist at the company's home office in Oakmont.

**Dearborn Stove Co.**



**E. S. Kleinmann**

will direct the sales activities of 59 salesmen and regional sales managers in 50 territories, with regional offices and warehouses in key cities throughout the nation.

He joined Dearborn in 1940 as a salesman in Chicago.

**Empire Stove Co.**



**G. H. Nichols, Jr.**

manager for the A. O. Smith Co.

**Warren Petroleum Corp.**

K. T. White, formerly district manager of the Houston LPG division of Warren Petroleum Corp., has been named sales manager. He is succeeded by J. T. Bradley, formerly manager of the distribution department of the LPG division.

**Reznor Manufacturing Co.**

The following appointments have been announced by the Reznor Manufacturing Co.:

Karl M. Midney, formerly president of Metal Industries Inc., Youngstown, Ohio, has been named district manager of the Florida territory.

James Sweeney has been made assistant to Lester Crahan, district manager of the California territory and will work with Reznor distributors in the northern part of the state.

**C. L. Bryant Corp.**

Frank J. Yuhas has been named assistant sales manager of C. L. Bryant Corp., it was announced by E. Lee Merrill, president of the Cleveland, Ohio firm.

A veteran of 17 years in the heating and air conditioning field with the company, he has served as sales engineer for the past six years in the Cleveland area.

**Bastian-Morley Co., Inc.**

Bastian-Morley Co., Inc., has elected Harry B. Carbon president. He is also the 1954 chairman of the gas water heater division of GAMA. Other officers include: Harry J. Morley, vice president; R. A. Hunter, secretary; H. J. Kohne, treasurer; John Zylstra, controller.

**Ralph A. Caylor**

Ralph A. Caylor, district manager of the Indianapolis area for Surface Combustion Co., Janitrol Div., Toledo, passed away recently after an extended illness. He was with the firm 17 years and was widely known throughout the industry in the mid-west.

**Tom Gibbons**

Tom Gibbons, 40, director of advertising and sales promotion of the Coleman Co. of Wichita, Kans., died recently following an automobile accident.

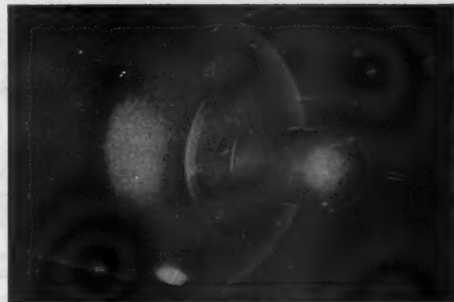
Prior to joining Coleman last May, Mr. Gibbons was director of marketing of the Caloric Stove Corp., Philadelphia, after six years as advertising manager of Magic Chef, Inc., St. Louis.



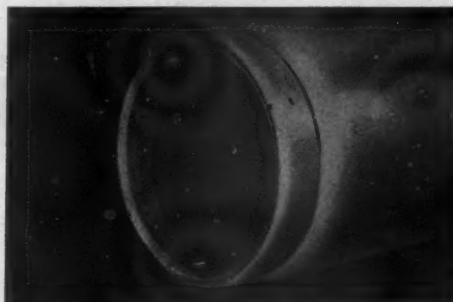
# PREST-O-LITE Trade-Mark CYLINDERS

## for LP-Gas

### are your best buy



*Data remains easy to read throughout life of the cylinder. Large characters are deeply cut into an extra thick, wide flange on 60-lb. and 100-lb. capacity cylinders (into valve protecting head ring of 20-lb. and 40-lb. styles).*



*Superior anti-rust coating protects the cylinder bottom and interior of footring against corrosion—a valuable extra at no additional cost to you!*

When it comes to LP-Gas cylinders, your wisest, most economical investment is in the PREST-O-LITE Brand. For PREST-O-LITE Cylinders combine unsurpassed quality, low cost, and attractive appearance to satisfy the exact needs of LP-Gas users everywhere.

PREST-O-LITE Cylinders are rugged and sturdy for long, dependable service life. They're lightweight for easier handling at lower expense. Factory testing is in excess of requirements to assure maximum safety and performance. Every PREST-O-LITE Cylinder is deep-drawn to extremely uniform wall thickness. Durable aluminum enamel protects the cylinder finish indefinitely and reduces repainting costs.

For further information write or 'phone your nearest LINDE Office today. Ask for free booklet F-8187.



PREST-O-LITE Cylinders are available in the popular 20-lb., 40-lb., 60-lb. and 100-lb. capacity sizes, with or without valves. Other styles can be made to order.



The terms "Linde" and "Prest-O-Lite" are registered trademarks of Union Carbide and Carbon Corporation.

#### LINDE AIR PRODUCTS COMPANY

A Division of Union Carbide and Carbon Corporation

30 East 42nd Street  New York 17, N. Y.

Offices in Other Principal Cities

In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto



## L. P. Gas Proves Best In Government Tests

Liquefied petroleum gas, used in millions of rural, small town and suburban homes, has emerged successfully from the latest of a series of government tests of competitive household fuels.

Tests concluded recently at Beltsville, Md., by the U. S. Department of Agriculture's bureau of human nutrition and home economics revealed that L. P. gas is faster than electricity for cooking, the L. P. Gas Informa-

tion Service, Chicago, announced recently following an analysis of a report issued by the government agency.

Despite its satisfaction over this phase of the Beltsville experiments, the L. P. gas industry agency criticized the "Electric-sponsored pro-

ject" as being limited to a study "merely of the energy ratios of gas and electricity and not of overall comparative costs."

"The Beltsville tests were designed to cover only one relatively minor phase of electric and L. P. gas performance, utilization of energy, but there are many other factors which make L. P. gas the more economical cooking fuel," the information service statement said. "Among these are the generally lower cost of L. P. gas, the lower initial price of the gas range, lower installation cost and negligible maintenance expense (most gas burners are guaranteed for the life of the range)."

Asserting that for years the electrical industry has claimed that gas ranges use three times as much energy as electric ranges, the industry agency said:

"The Maryland tests, despite their NEMA sponsorship and limited scope, failed to prove this ratio. Furthermore, no attempt was made by the government staff to interpret its findings in terms of cost of operation, or in terms of the particular community under investigation."

The L. P. gas statement also referred to the relative merits of gas and electric ranges in terms of cooking utensils. Gas, it contended, proves its adaptability by performing effectively with any type of utensil, while the size and shape of the utensil is an important factor in electric cooking. It was explained that the gas flame shapes itself to the entire bottom surface of the pot or pan.

Freedom from worry about fuel supply interruptions brought about by storm conditions and line failures was cited as an all-important reason why non-urban householders rely on L. P. gas.

## Superior Propane Now Serving 15,000

During December 1953, Superior Propane Ltd. signed up its 15,000th domestic customer, a net increase in the number of customers during the past year of 2364. Superior Propane Ltd. serves its customers through a network of eight plants and branches, and thirty agents and dealers covering Southern Ontario from Sarnia in the west to the Ottawa and St. Lawrence valleys in the east.

# Butane-Propane News

## dependability



...is built into every Superior Valve

Years of proven service throughout the LP-Gas industry is your guarantee of dependable operation from Superior cylinder valves. Designed for rugged service, they operate easily; there is no freezing or sticking under adverse conditions. Be certain your installations include the most dependable cylinder valves on the market ... those made by Superior.

**Superior valve and fittings co.**

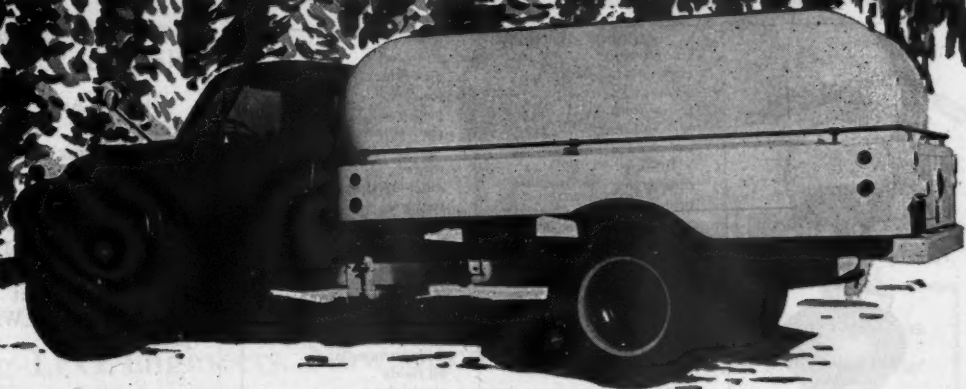
Pittsburgh 26, Pa.





# HIGHER PROFITS THAN EVER BEFORE...

are now possible with LMC's new tanks!



The LMC incorporates all the desirable features of home delivery units in one model:

ECONOMY • HIGH PAYLOAD • SAFETY • SMART APPEARANCE



*Buy on the LMC budget plan!*

WRITE FOR ADDITIONAL INFORMATION, PRICES AND PAYLOADS

**LUBBOCK MACHINE & SUPPLY CO**

**LMC**  
LOW MILEAGE COST

DRAWER 1589

PHONE 3-4631

LUBBOCK, TEXAS

MARCH, 1954

129



## Ruud Mfg. Co. Plans To Move Offices

Ruud Manufacturing Co. is planning to move its general offices from Pittsburgh, Pa. to Kalamazoo, Mich.

In a recent letter to stockholders, Ruud management revealed its intention to construct a general office building adjacent to its Kalamazoo manufacturing plant. This is a modern factory on a 14-acre plant site.

According to M. G. Hulme, board chairman, since the establishment of the Michigan plant a dozen years ago, and the more recent discontinuance

of major manufacturing operations in Pittsburgh, it has become increasingly apparent that general offices also should be moved to Kalamazoo.

Founded in 1889 by Edwin Ruud, the manufacturer of gas water heaters and house heating appliances for homes, commerce and industry has been a nationally recognized Pittsburgh industry for more than half a century.

## Suburban Gas Buys New Units

W. R. Sidenfaden, president of Suburban Gas Service, has announced

the acquisition of four new propane distributing properties.

The company has acquired the Petersen Butane Service of Watsonville and the tank gas division of the Arizona Public Service Co. at Gila Bend, Ariz. In January Suburban Gas Service acquired the property of Western Liquid Gas Co. of Adelanto, Calif., and the Mojave Liquid Gas Co., Barstow. The new Barstow acquisition will be consolidated with Suburban's present plant in Barstow.



J. B. Myers (left) president of Southeastern, receiving winner's check from Vincent Anderson. Mrs. Leah Felerman, "Miss Water-Hotter" is shown receiving the company's award.

## FOR YEAR-ROUND LP-GAS LOAD, *Sell These*

## RANSOME PRODUCTS AND MARKETS

RANSOME Line	Uses	Prospects
<p><b>Torches</b></p>  <p><b>Furnaces</b></p> 	<p>lead wiping melting out joints preheating soldering pipe bending sweating streamline fittings core drying singeing paint removal disinfecting poultry and hog sheds laying and shaping asphalt tile weed burning backfiring melting lead, babbitt, glue, paraffine, asphalt</p>	<p>plumbers pipefitters ranchers garages contractors sheet metal workers roofers machine shops factories asphalt tile layers foundries slaughter houses poultry men telephone companies painters public works departments oil fields electricians</p>
Heating systems for dryers and dehydrators	drying cotton, rice, fruit, etc.	cotton gins fruit and nut growers rice growers
Built-to-order standby plants	for original or supplemental gas supply	industrial plants municipalities schools

**Cash in NOW with the Ransome line!**  
Write TODAY for prices, discounts, descriptive literature.

## RANSOME COMPANY

Designing & Constructing Engineers

ROOM A3 4030 HOLLIS ST. EMERYVILLE, CALIFORNIA

*Ransome*

## Southeastern Wins National Sales Contest

Vincent Anderson, assistant advertising sales promotion manager of White Products Corp., manufacturers of water heaters, has announced that Southeastern Sales Co., Springfield, Ohio, won the company's national sales contest for 1953. The contest, "Miss Water-Hotter of 1953," was based on percent of quota accomplishment. All White distributors participated.

## Wright Gas Operations Acquired By Lynch Bros.

The Wright Gas Co. of Mount Oreb, Ohio, has been acquired by the Lynch interests of Pine Meadow, Conn. Other Lynch companies include the Lyn-Gas Co. and the manufacturing concerns of Lynch Bros. and Harris Plains Corp.

Thomas J. Lynch Jr. is president of the company and Walter T. Lynch is treasurer.

## Kettle Falls, Wash., Has New Propane Bulk Plant

Western Gas & Power Co.'s new propane gas bulk distributing plant in Kettle Falls, Wash., is now in operation, according to Glen F. Fanaler, the firm's general manager. Western



# At Last—The "PERFECT" Unit

1700 W. G. Capacity  
Twin Unit Model  
#106 Constructed  
under W250-250#  
W.P. and I.C.C.  
M.C.-330 Codes.

Completely plumbed with  
Rego Fittings, Viking KK-  
190 Mechanical Seal  
Pump, Large Capacity  
Strainer and correct power  
take-off with Spline Jack  
Shaft.

Two large "Space-Saver"  
compartments with chrome  
hardware—left containing 54  
W. G. Fuel Tank—right Nep-  
tune #433 Printometer; 75'-1"  
Liquid hose and 75'-1/2" Vapor  
Hose.

Recessed Ther-  
mometer, Rotary  
and Pressure  
Gauges in Rear.

3" I-Beam Runners on  
Frame—Two baffles each  
tank—all cradles Bar Pad-  
ded—Pump and Meter  
mounted with union con-  
nections for easy removal.



Complete I.C.C.,  
Stop and Direc-  
tional Lights.

20# Dry Chemical  
Fire Extinguisher  
mounted.

Factory Tailored  
Bumper and Skirt-  
ing.

Two coats DuPont Au-  
tomotive Enamel applied  
at 180°F. over primer—  
A beautiful glossy hard  
finish and lettered to  
your specifications.

Hannay Elec-  
tric Reel op-  
tional for in-  
line mounting  
with meter in  
compartment.

Unit completely mounted on  
new 1954 Factory LPG Powered  
International RP-162 chassis—  
8:25x20 Tires on Budd Wheels  
—Front and Rear—172" W.B.  
Heater and Defroster—choice of  
colors.



A typical Model 106—optional plumbing  
plan—full control panel in reel and meter  
compartment, for operating remote control  
Okadee valves, P.T.O., Clutch and throttle.

Trinity's Beautiful New  
Model No. 106—The Result  
of careful planning and design by lead-  
ing LPG Engineers. Now offered in sizes  
from 1400 to 1700 WG Capacity. Deliveries  
are prompt and the prices are reasonable.  
Write—Wire—or Phone for complete  
technical information and prices.

And . . . Deliveries  
are prompt on our  
famous 'Eveready'  
Gas Systems and  
Challenger Model  
Transport Units.

Financing available on complete  
units—25% Down—Balance 24  
months.



3301 SOUTH LAMAR STREET • TEL. HU 8321 • DALLAS, TEXAS

MARCH, 1954



Gas also recently completed a \$50,000 plant and sales office in Spokane.

The new plant, under the management of Robert Nelson, will service the area north of Springdale, including Inchelium, Hunters, Northport, Ione, and Metaline Falls areas.

In addition to L. P. gas, Western Gas sells and installs all types of gas-burning appliances.

### New Plant Facilities Will Increase LPG Output

Natural gas now vented or burned in the Golden Trend field area of Oklahoma will be utilized in making

liquefied petroleum gases when plant expansions now authorized or underway are completed.

Owners of the Garvin county plants system have approved construction of additional facilities to increase capacity of their three large plants from 238 million to 350 million feet of gas daily.

Gathering lines will be extended into fields around Lindsay, and to the Erin Springs and Purdy areas.

Other expansions slated in the Golden Trend area include Cities Service Gas Co. and Sohio Petroleum Co. The former has been granted author-

ity to build an additional 69 miles of truck line in its central Oklahoma area and an additional unit for one of its compressor stations, at a total cost of \$3,022,700. The latter is getting in operation in the Eola field a plant to process 13 million feet of gas a day, with recovery of about 20,000 gallons of liquids. Capacity of this plant is expected to be increased to 20 million feet within a year, according to news reports.

Upon recommendation of the organization committee, of which C. J. McAllister is chairman, the directors elected R. H. Mahnke a vice president of the association. He will continue in charge of the various LPGA district offices.

A record budget of \$276,000 for 1954 was approved to take care of LPGA's expanding services to the industry. This is \$30,000 more than the 1953 figure.

Harry Schagrin, Schagrin Gas Co., Middletown, Del., was elected director for Delaware to fill a vacancy on the board created by a recent resignation.

Marian Hung-yin Tsai, young Chinese girl who is taking the LPGA-sponsored course at Southern Tech under a scholarship provided by members of the board, was a guest of honor at the Dec. 2 luncheon, held jointly with the South Carolina LPGA. She thanked her benefactors demurely, but sincerely. Mayor William Morrison of Charleston was also present.

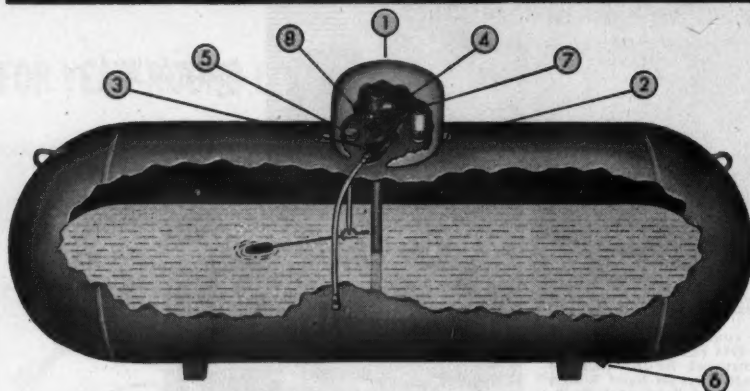
### Pan American Insurance Group In New Home

The fast-growing Pan American Casualty Co., Houston, offering broad coverage insurance protection to L. P. gas dealers, has moved into its beautiful new home office building at 2905 Louisiana St., Houston.

Chief executives of Pan American are T. E. Gammage, president and founder; Earl W. Gammage and T. Earnest Gammage, Jr., vice presidents; Lloyd E. Davis, chief safety engineer, and Truman Adkins, director of industrial education.

The firm which started in business in Houston in 1947 has made unusual progress. It realized the great need existing for safety engineering and for the supplying of adequate insurance coverage in the relatively new L. P. gas industry. The technical know-how and professional talents were acquired, and Pan American set out to adapt sound insurance principles to solve the problems in the butane field. Today, its operations in this industry embrace thirteen southern and southwestern states and com-

## Economy LP-GAS SYSTEMS



### Some of the many Features and Qualities of *Economy* Systems

- ① ONE PIECE STREAMLINE DOME!
- ② STURDY DETACHABLE HINGE!
- ③ LARGE ORFICE REGULATOR!
- ④ LIQUID TAKE-OFF, BUILT-IN EXCESS FLOW!
- ⑤ FLOAT GAUGE, REPLACEABLE SNAP-ON DIAL!
- ⑥ BOTTOM PLUG FOR LIQUID, OR CLEAN OUT!
- ⑦ LIQUID LEVEL OUTAGE GAUGE!
- ⑧ PRESSURE GAUGE OUTLET!

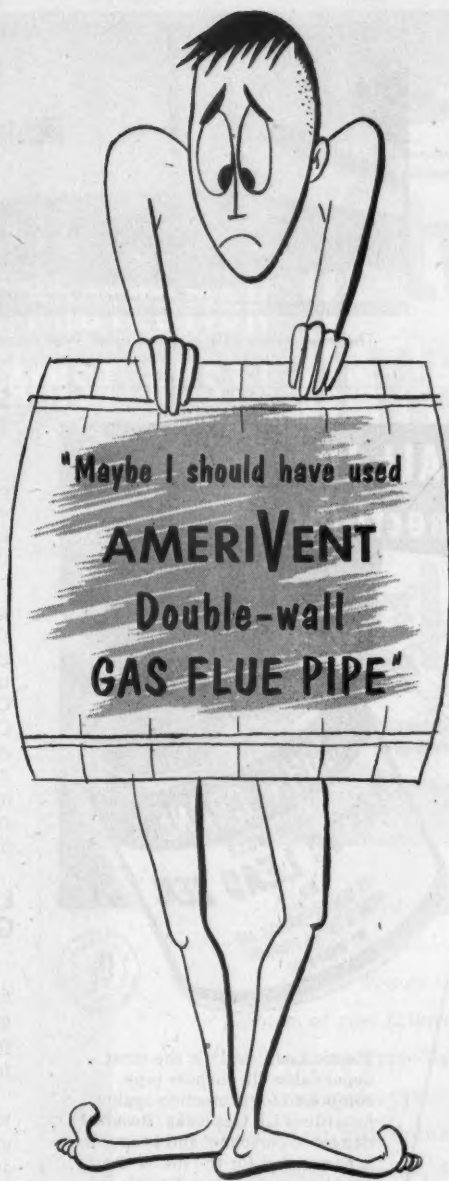
### SEE US BEFORE YOU BUY!

Economy Truck Tanks, Transports, Skid Tanks, Anhydrous Ammonia Tanks and all types of Steel Fabrications.

## DALLAS TANK COMPANY, INC.

201-5 W. Commerce Street • P. O. Box 5387  
DALLAS, TEXAS





WANT THE **NAKED TRUTH** ABOUT GAS APPLIANCE FLUE PIPE? LET US RUSH YOU THE **BARE FACTS** ABOUT **AMERIVENT** DOUBLE WALL GAS FLUE PIPE AND ITS SENSATIONAL NEW TIME-SAVING **SNAP-LOCK** JOINT. FOR COMPLETE DETAILS FILL OUT AND MAIL THIS COUPON

American Metal Products Co., Inc.  
2911 Compton Ave., Los Angeles 11, Calif.

Gentlemen:  
Please send me literature and prices on "AmeriVent"  
and the name of my nearest supplier.

NAME

COMPANY

ADDRESS

CITY  ZONE  STATE



american metal products co. inc.

2911 COMPTON AVENUE • LOS ANGELES 11, CALIF.



prise a sizable portion of the company's total casualty business.

"One of the rules we have stuck to through thick and thin—which folks in the butane business seem to appreciate greatly—is to make fast, fair settlements of all claims," stated T. E. Gammage, president.

In addition to being a member of numerous state L. P. gas organizations, Pan American is also an advisory member of the Insurance committee of the national organization, L. P. Gas Assn. Inc., with headquarters in Chicago.



The new home office building of Pan American Casualty Co., 2905 Louisiana, Houston, Texas.

## PLS\* protects ALL LP Gas Connections

**BULK PLANTS**

**COMMERCIAL INSTALLATIONS**

**DOMESTIC INSTALLATIONS**

**JOHN CRANE**  
INSOLUBLE  
**PLASTIC LEAD SEAL**  
NO. 2  
FOR SEALING THREADS AND GASKETS ON ALL EQUIPMENT  
NET WEIGHT 5 LBS.

Plastic Lead Seal\* is the most dependable all-purpose pipe compound for protection against hazardous LP Gas leaks. Resultant danger to personnel and property is eliminated for the life of the connection. PLS won't wash out—is completely impervious to butane and propane, liquid or gas—and withstands pressures to 6000 psi. Temperatures to 500° F. have no effect. PLS never hardens—allowing joints to be easily broken after years of service.

PLS is widely recognized in the LP Gas industry as the leading sealing compound for threaded connections, pipe joints, and gaskets. Approved by Underwriters' and the Butane Propane Institute of Louisiana.

**Test-prove PLS at our expense. Send for a generous free sample. Crane Packing Co., 1838 Cuyler Avenue, Chicago 13, Illinois**

**JOHN CRANE CRANE PACKING COMPANY**

## Suburban Propane Gas Buys Two Firms Capital Stock

Suburban Propane Gas Corp. bought all the outstanding capital stock of Natural Gas Co. of Hammon-ton N. J. and Fuelite Natural Gas Corp., of Lexington, Mass.

Mark Anton, Suburban Propane president, said the acquisition of the liquefied petroleum gas companies gives his firm an uninterrupted distribution area from Maine to South Carolina. Purchase of Natural Gas Co. fills in gaps in south Jersey and eastern Pennsylvania, and Fuelite's properties will extend Suburban's operations in the Cape Cod area. The two acquisitions add 60,000 customers for Suburban.

## LPG Tobacco Curing System Given State Approval

Approval of the "Gold-N-Leaf" gas fired tobacco curing system has been granted by the North Carolina Department of Agriculture, it was announced recently.

This system is especially engineered for so-called "flue cured" golden leaf tobacco and uses LPG to supply the required heat. It is adaptable to new or existing tobacco barns.

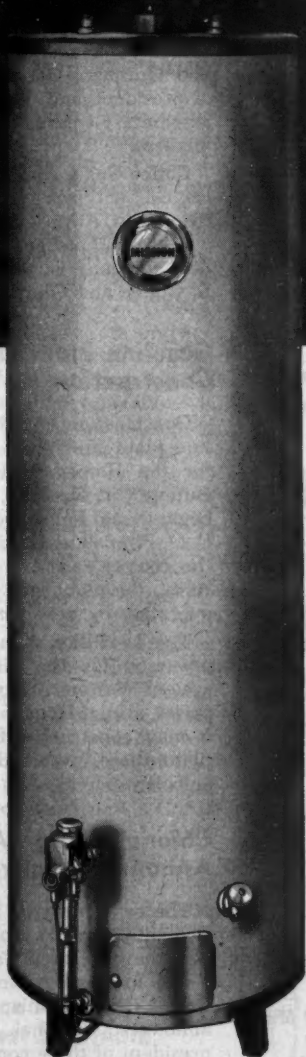
All curing systems for installation in tobacco barns are required to pass tests and inspections by the State Department of Agriculture before they can be sold in North Carolina. This requirement is in accordance with a law of the state to provide protection to the tobacco grower against fire hazard and to establish the capacity rating of the burner units.

The use of LPG as a fuel for curing all grades of tobacco is rapidly gaining, due both to its natural advantages in labor savings and its up-grading of the cured product. Gas is clean and burns with no odor, soot or filmy smudge and the danger of contaminated or "off-type" tobacco is eliminated.

The "Gold-N-Leaf" systems are to



After 9 years of research...  
**TWICE THE PROTECTION  
AGAINST RUST!**



**MISSION ACCOMPLISHED!** Since 1945 Mission engineers have been devoted to the task of developing a water heater that would answer the problem of rust failure and service annoyance.

Gleaming Pyro-Glass, the toughest glass lining ever made, performed miracles in the laboratory.

Not content with ordinary results, however,

Mission engineers finally hit upon the solution of fusing a second lining of Pyro-Glass to the first. The result? *Double protection* against tank failure. Double the *sales appeal*, too, of ordinary single glass lining, without *added cost!*

*In 30 and 40 gallon sizes.*

# MISSION

## Doubleglas GAS WATER HEATERS

**MISSION APPLIANCE CORPORATION** Hyde Park Station Los Angeles 43, California

MARCH, 1954



**NEW**  
one-man

# APPLIANCE TRUCK

No. 79C  
Appliance  
Truck. Handle  
length 60"  
Nose width 24"



▲ This Thomas special appliance truck is designed for easy, one-man operation. Ends back-breaking lifting of stoves, crates, refrigerators, water heaters, etc. Double-braced tubular steel frame. 10x3.00 full pneumatic tires, Hyatt bearings. Furnished with 2 web straps. Order on "return if not pleased" basis. Thousands in use.

**THOMAS TRUCK & CASTER COMPANY**

410 MISSISSIPPI RIVER • KEOKUK, IOWA

## STEADY VAPOR PRESSURE UNDER ALL WEATHER CONDITIONS!

IS ASSURED WITH

### PARACOIL STEAM TYPE LPG VAPORIZERS

- Continuous full load output at any desired gas pressure, regardless of ambient temperature conditions, is a "GUARANTEED CERTAINTY" with the industry-tested Paracoil Steam Operated LPG Vaporizer.
- Unique drainage system prevents condensate freeze-ups.
- Entirely safe. No gas flames used. Operates on low pressure steam.

#### DESIGN

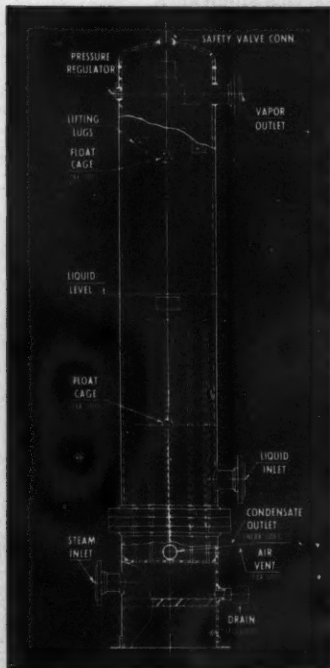
- ASME Stamped. Par U-69. Inspection Certificates on Order N.B.F.U. Pamphlet 58, Latest Issue.

*Write for*

**ADDITIONAL DATA AND PRICES**  
TYPE 48-E VAPORIZER  
STANDARD PRODUCTION MODELS UP TO 6000 GPH  
DESIGNS MAY BE VARIED TO MEET  
SPECIAL JOB CONDITIONS.

### DAVIS ENGINEERING CORPORATION

1058 EAST GRAND ST., ELIZABETH, N. J.  
30 ROCKEFELLER PLAZA, N. Y. 20, N. Y.



be marketed in the golden leaf tobacco belt of Virginia, North Carolina, South Carolina, Georgia and Florida. Sales outlets now are being established by Henry Brown of Farmington, West Virginia, who is southern sales manager.

Mr. Brown, a native of North Carolina and widely known throughout the state, is now making a survey of the golden leaf tobacco belt to determine a suitable place for establishing his headquarters.

### Green's Fuel Names Georgia Distributors

Green's Fuel Inc., Sarasota, Fla., has appointed two new Georgia distributors. Modern Appliances Inc. will service the counties of Colquitt, Thomas, Brooks, and Lowndes. Stores will be maintained in Valdosta and Quitman, Ga. J. W. Holloway is president and W. F. McCracken is secretary-treasurer of Modern Appliances.

Coffee Gas & Appliance Co., Douglas, Ga., will service Jeff Davis, Coffee, Bacon, Atkinson, Clinch, and the western half of Lanier counties. The new company is headed by Watson R. Coffee and Olin Smith.

### Gasoline Plant Under Construction In Wyoming

Construction of a \$4 million gasoline plant in Weston county, Wyo., for the Homer S. Head Propane-Butane Co., Houston, is expected to begin in mid-February. According to F. M. Pimpell, executive secretary of the Northeastern Oil Producers Assn., the plant will probably be in operation by next summer.

The \$4 million plant is one of two proposed for the oil-rich Clareton area of Weston county. Allen Enterprises, also of Houston, has indicated it may construct a butane-propane plant there, provided it can obtain sufficient acreage.

### Colonel George A. Burrell Announces Retirement

The retirement on Feb. 1, 1954, of Colonel George A. Burrell, president of Atlantic States Gas Co. of New York, Inc. and Atlantic States Gas Co. of Pennsylvania, Inc., has been announced. Colonel Burrell was president of these companies for the past 16 years, and was one of the companies' founders. He will continue to serve in an advisory and consulting capacity with both companies.

A nationally recognized gas and oil

BUTANE-PROPANE News



engineer for many years, he headed this country's Chemical Warfare Division in 1917, and was formerly connected with the Bureau of Mines. In 1948 he received the Hanlon award from the Natural Gasoline Association of America in recognition of his technical services to the industry.

Colonel Burrell will be succeeded by T. A. McEachern, Jr., who for many years has been connected with the Atlantic States Gas Companies and their affiliated interests. Mr. McEachern is also president of Southwest Gas Producing Co., Inc. of Monroe, La.

### Eastern Gas Water Heater Group Formed In GAMA

Formation of an eastern manufacturers group within the Gas Appliance Manufacturers Association's water heater division has been announced.

Eleven manufacturers' representatives attended the first meeting of the group recently held in Cleveland. Harry B. Carbon of Bastian-Morley Co., Inc. was elected chairman and Lee W. Rasch of the Rasch Manufacturing Corp. was named vice chairman.

The group was formed of GAMA water heater manufacturers who are not members of the Pacific Coast Gas Association which has long had its own water heater organization. It will discuss primarily problems of interest to eastern manufacturers and will act in the East as does its counterpart in the West.

Those attending the initial session were Mr. Carbon and H. J. Morley of Bastian-Morley; Charles Woodroof of American Radiator and Standard Sanitary Corp.; Martin J. Boyle and J. N. Crawford of the Bryant Heater Div. of Affiliated Gas Equipment, Inc.; Kress Ludlow of Cleveland Heater Co.; Harold J. Rust of Handley Brown Heater Co.; L. R. Mendelson and Ralph R. Mendelson of Hotstream Heater Co.; J. P. Hutchinson of National Steel Construction Co. of Indiana; Bob Pemberson of Ruud Manufacturing Co.; Max J. Eisner of Sands Manufacturing Co.; R. Shepherd of A. O. Smith Corp.; and D. W. Whitehead of D. W. Whitehead Manufacturing Corp.

### Cities Service New Plant at West Seminole

Frank M. Perry, vice president of Cities Service Oil Co., announced recently that the company will build and operate a natural gasoline plant at West Seminole, Texas.

**FOR GREATER PROFIT  
STANDARDIZE  
ON WELDIT!**



### History of Welding No. 1

During the Iron Age man first discovered the utility of metal. In working with it, he was little more primitive than the American colonial blacksmith.

Since 1918, Weldit, Inc. has created an enviable reputation for fine welding equipment and accessories. For 36 years Weldit has maintained the highest quality and productive ingenuity in supplying its franchised dealers throughout the world with the finest welding equipment.

### C-48-B

WELDIT  
PAINT  
BURNER



This Weldimatic paint burning torch is used for removing paint from wood or metal surfaces. It will not damage base material. The C-48-B is also used for installing asphalt tile and singeing fowl.

### WELDIT L-P PLUMBER'S FURNACE

A new Weldit development for plumbers and tinmiths. This L-P furnace can be converted to floor or tank top use. Melts Lead, Babbitt, Solder, Tar, Asphalt or Paraffin. Generates over 65,000 B.T.U. quickly.



Canadian Distributor:  
Alloy Metal Sales — 181 Fleet St., East  
Toronto 5, Ontario, Canada

**Weldit**  
INC.  
SINCE 1918

**990 OAKMAN BLVD.  
DETROIT 38, MICHIGAN**



## The Facts About That Kentucky Explosion

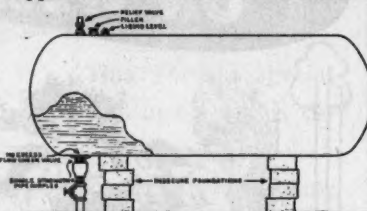
On Jan. 15 the Associated Press carried a dispatch about an alleged explosion of a 1000-gal. propane gas tank at Campton, Ky., which got into print from coast to coast. As the result of this explosion and the fire which followed, a general store was wiped out, five youths were injured, and total property damage estimated at \$100,000 was incurred.

A complete inspection of the damage was made by the State Fire Marshal J. T. Underwood, Jr., Chief L. P. Gas Inspector Jess Ward, and District Inspector Pete Redwine. Mr. Ward reports the following facts concerning this incident.

The 1000-gal. tank was located back of the Rex Center General Store, at Campton. It was used for filling 100-lb. cylinders, hence was a commercial instead of a domestic installation. The tank was set upon a scaffolding of concrete blocks. The outlet piping was connected directly into a 2-in. opening in the bottom of the tank, without the required excess flow check valve. Immediate pipe connections were as follows: A 2-in.

single strength close nipple screwed into the tank opening. A reducer screwed onto the close nipple. A single strength close nipple screwed into the reducer. A shut-off valve screwed onto this close nipple.

The tank fell off the concrete block scaffolding, shearing the 2-in. close nipple. The contents of the tank



emptied into the center of the town, and the explosion and fire followed.

Mr. Ward stated that this disaster could have been prevented had the installation complied with the present Kentucky regulations for the storing and handling of L. P. gas. These require a solid foundation with adequate footing in the ground, an excess flow valve, and double strength piping.

Mr. Ward pointed out that the Kentucky regulations do not require a permit for the installation of tanks

under 1200-gal. capacity, so the owner, Mr. Center, had not been required by law to file an application, with plans and specifications, with the Office of the State Fire Marshal.

Under the stepped-up inspection program now being carried on by the representatives of the State Fire Marshal's office, installations violating the safety provisions of the regulations are being caught and corrected as rapidly as possible.

## Gas Range Improvements Demonstrated in Cleveland

A vastly improved gas range incorporating newly developed research principles is now a practical possibility. This welcome news emerged from a series of three demonstrations of working models showing advanced features developed by the American Gas Association Laboratories in PAR-sponsored research projects.

About 180 top executives of gas utility companies from all parts of the country attended the first three presentations recently held in Cleveland.

The demonstrations were sponsored jointly by the PAR Committee



# Mutual

## YOUR FIRST CHOICE

### MOST EFFICIENT AND VERSATILE LP-GAS FURNACE BUILT

Light a match and—POOF—you're in business. Demonstrate this furnace to plumbers and maintenance men and you've made a sale.

This Mutual furnace employs the principle of the venturi to assure perfect combustion; uses less gas and more air. Produces a hotter flame and does the job faster. Will melt 60 pounds of lead in 12 minutes. No smoke, no priming or pumping.

This unit is well balanced, will not tip over, and is extremely rugged to withstand severe abuse. The No. 2 Furnace fits Mutual 12 and 20 pound ICC cylinders. The No. 2-A bench model may be used with any Propane cylinder. The No. 2 and No. 2-A Furnaces include non-warping head, adjustable orifice and tube, and removable handle and shield. Simplicity of design, having only three main parts, makes the Mutual No. 2 and No. 2-A furnaces dependable and fool-proof.

Like all Mutual products its design reflects years of engineering "know-how". A demonstration will win a new customer.



NO. 2A BENCH  
TYPE FURNACE

Send today for free catalog on Mutual's complete line.

Member L.P.G.A.

# Mutual



LIQUID GAS EQUIPMENT CO., Inc.

3638 WEST IMPERIAL HIGHWAY • INGLEWOOD, CALIFORNIA



and the Gas Industry Development Committee of AGA. They represented a new approach to the problem of improving the conceptions of manufacturers and utilities as to what can be done to further improve the domestic gas range. It marked the first time that working models, graphically depicting research features, have been presented by AGA to interested utility and manufacturer company representatives.

The program presented on each of the three days was identical. Included in the demonstration were new design of top burners, pilots, valves, an indirect oven, and a golden glow broiler using radiant flame. In presenting the new principles of construction by demonstration, it is hoped to speed up the commercial production of domestic gas ranges incorporating new principles developed in the PAR research projects.

Throughout the demonstration, it was emphasized that the models shown were working laboratory units and did not represent finished commercial products. Styling, materials of construction and other refinements are left to the ingenuity of the manufacturer.

It was pointed out that the improved models are designed to make gas ranges superior in seven respects:

1. Cool ranges for cooler kitchens.
2. Instantaneous ignition or re-ignition of top burners at any input rate.
3. Unsurpassed heating speeds, plus high efficiency.
4. Greater cleanability.
5. Precision control of the 1000 heats possible with gas top burners plus very low turn-down heats.
6. A fast, large area, golden-glow broiler.
7. Positive elimination of explosion hazards in a precision controlled oven.

## New Trade Characters To Promote Fuelane

Fuelane Corp., Liberty, N. Y., marketers of "Happy Cooking Metered Gas Service" throughout northeast United States, recently introduced "The Hap Cook Family" to all dealers from Maine to Maryland.

"The Hap Cook Family" will be used to support Fuelane's 1954 gas appliance promotion in newspapers, direct mail, displays and point-of-sale material, and will be employed in the same manner that other advertisers have used such trade characters as the Green Giant, Snap, Crackle and Pop; Elsie the Cow, and the Campbell Soup Twins.

MARCH, 1954

# It's easy to install

# central heating

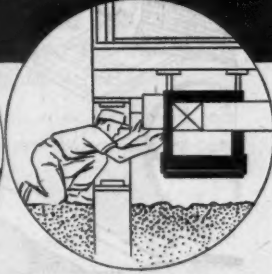
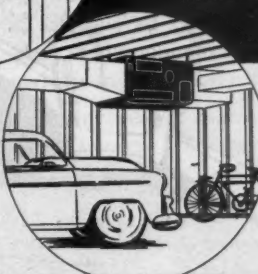
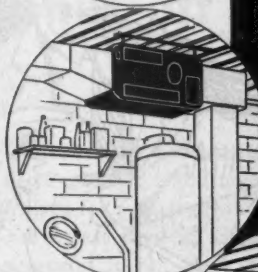
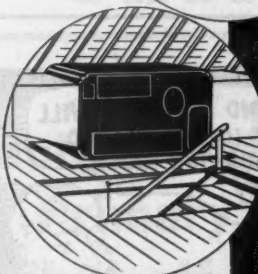
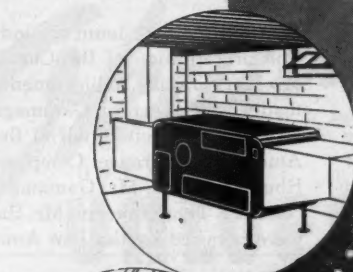
...when you use this simple formula

# Janitrol

FHS  
CONDITIONER

PLUS

# "Save-Way" AIR SYSTEM



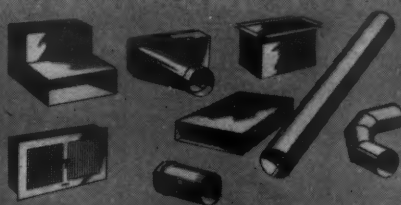
The Save-Way Air System, using 4" ducts, simplifies your installation work, reduces labor and material costs, provides the best there is in "every-room" comfort . . . at a price that is surprisingly low for this "ultimate" in heating.

As pictured above, Janitrol FHS Units can be installed where most convenient . . . requiring no floor

space, yet offering easy access to all controls and connections. Together —FHS and SAVE-WAY—offer the greatest possible flexibility . . . latest heating principles . . . simplified installations . . . and real opportunity for you.

For complete information write for Bulletin JS-185.

**SURFACE COMBUSTION CORPORATION • TOLEDO 1, OHIO**



**USE PREFABRICATED  
SHEET METAL ITEMS  
IF YOU WISH**

Everything needed to complete a Save-Way Air System, including 4" duct, fittings, register boxes and diffuser type registers are available as standard items from your regular suppliers.



# Texas Commission Members Honored for Safety Efforts

GENERAL Ernest O. Thompson, chairman and senior member of the Railroad Commission of Texas, and Frank Harvick director of the Liquefied Petroleum Gas Division of the Railroad Commission, were honored recently for their outstanding contribution in the field of safety in

the liquefied petroleum gas industry. The presentation of the Certificates of Meritorious Achievement was made by T. Earnest Gammage, Jr., vice president, on behalf of the Pan American Insurance Companies of Houston, Texas. Mr. Gammage said, "General Thompson and Mr. Harvick were honored by the Pan American



Left to right: T. Earnest Gammage, Jr., Gen. Thompson, and Frank Harvick.

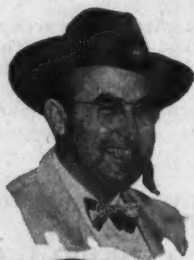
Insurance Companies because of their outstanding efforts in the protection of the public and their work in maintaining the operation of the industry within proper bounds." The Pan American Insurance Companies are specialists in the writing of insurance in the L. P. gas field in the Southwest.

The L. P. gas division, the newest and least known of the many Railroad Commission activities, has supervision of this immense and fast-growing L. P. gas industry throughout Texas. Since the division was created by the Legislature in September, 1951, the five field inspectors have made 10,380 inspections of L. P. gas installations in bulk plants and public buildings, such as churches, schools, and hospitals. In addition to these inspections, the safety work of the division in the transportation and handling of butane and propane has been outstanding.

General Thompson, in receiving the award, said "We are proud of the manner in which the men engaged in the L. P. gas business in Texas have guided their industry. I am gratified with the full and sincere cooperation the Commission has received from the industry, the insurance companies and the trade associations. We feel that some considerable measures of the success of the division has been due to this spirit of understanding and willingness to cooperate."

## Selwyn-Landers Moves To New Location

Selwyn-Landers Co., Los Angeles, manufacturers of L. P. gas equipment, moved into its new location early in February at Artesia and Manchester Blvds., in Buena Park. R. E. Meder, member of the firm, said 50 or more employees will be at the plant, although most of them will be transferred from the Los Angeles plant.



Don't delay — find out how underground storage can solve your storage problems. It's cheaper, safer and better. Call or write . . . NOW!



**SECURITY UNDERGROUND STORAGE COMPANY**

PHONE 2-4067 615 SUNSET DRIVE WICHITA FALLS, TEXAS





Left to right: Charles Martin and Ted Factor discuss new promotion for Mission.

### New Double-Glass Water Heater Announced

Long a closely guarded "top secret," a new water heater with a double-glass lining is ready for marketing by Mission Appliance Corp., Los Angeles.

An intensive advertising campaign will launch the new double-glass-lined model, under the direction of Charles Martin, Mission's new advertising and sales promotion director.

"Two Walls of Glass" is the story to be told soon by radio, newspaper, and television, graphically portraying the double protection against rust afforded by Mission's wholly new concept of the glass-lined tank. Preparation of the campaign is in the hands of Factor-Breyer, Inc., Mission's advertising agency. Mission's new "Doubleglas" water heater is the result of nine years search for a failure-free glass water heater tank lining, according to the company's announcement.

### Federal Taxation of Cooperatives May Come

In line with the special budget and tax message submitted by President Eisenhower to Congress on Jan. 21, the House Ways and Means Committee is studying the matter of the tax treatment of cooperatives and other organizations that are now wholly or partially tax exempt.

Reports from Washington indicate that the elimination of this tax inequality, which has long been needed, is not only possible, but is highly probable this year, if the Treasury Department and Congress can agree on the proper way to accomplish it.

Your views on this matter should be submitted by wire to the Ways and Means Committee, House Office Building, Washington, D. C., and to your senators and your representatives.

# APPROVED

## Okadee

"PERFECT SEAL"

## VALVES

for  
Bubble-tight  
Primary  
Shut-off in  
L P G A S L I N E S



Underwriters' Laboratories, major LP gas producers\*, and Liquified Petroleum Gas Commissions of several States\* approve Okadee Valves for primary shut-off in LP gas lines. In addition, Okadee Valves are used in virtually all types of gas and liquid lines at pressures to 600 p.s.i. and temperatures to 800°F.—wherever a perfect seal, low maintenance and long life are necessary.

Get complete data, including material specifications, on Okadee Valves — and newest Underwriters' Laboratories test report—without obligation, today.

\*Names on request.

- A. S. A. Standard dimensions
- Sizes from 1/2" to 6"
- Single- and double-seated disc valves
- Hard-faced valves and seats . . . perfect metal-to-metal seal
- Self-cleaning, self-compensating valve discs
- Lever, rack-and-lever, or worm-gear operation
- Non-lubricated
- No wedge action
- Valves and seats wear in instead of "wearing out"
- All parts quickly replaceable in the field
- Inside and outside stem packing . . . double assurance against stem leaks

Underwriters' Laboratories Reexamination Service Guide No. 141 A3.1.22, File MH5163. SL Screwed Type Series and Series 15 and 30 Flanged Type Okadee Valves are suitable as a positive shut-off in LP gas pipelines and other LP gas applications for a working pressure of 250 p.s.i.



Write for Bulletin No. 51FL



**Okadee COMPANY**  
332 South Michigan Avenue • Chicago 4, Illinois



## Answers to Problems On Page 60 of February Issue

**Problem 1.** The underground tank may be used for aboveground storage if it complies with the requirements for aboveground storage tanks. Assuming that the working pressure of the tank is adequate, you should check the pressure relief valve—it will probably be about one-third large enough for aboveground service. The smaller valves are legal for underground storage because the tank temperature of a buried tank never goes much above 70°, while

the discharge capacity for a tank located above ground must be sufficient to take care of sunlight exposure on the hottest summer day, and also provide reserve for heat transmitted from any adjacent building that may burn.

**Problem 2.** Excess flow valves are designed to close only when the flow of fuel through the valve approaches the full capacity of the outlet pipe. A leak of less magnitude, like normal withdrawal, does not close the excess flow valve. If this wreck could have been approached safely, opening the outlet valve wide as quickly as possible should have caused the excess

flow valve to close. Approaching for this purpose is hazardous, as ignition of the fuel at any point could cause a flash-back to the leak, and even though the approach could be made down-wind, the man closing the valve should be protected by a water fog spray while in the danger zone. Approaching in still air, when the escaped gas blankets the entire area, introduces another hazard—that of asphyxiation. This would be too hazardous to undertake without an air line mask, asbestos clothing, and full fire protective paraphernalia.

**Problem 3.** The ICC cylinder may be filled—the mongrel job should not. The customer should be given the explanation that the ICC cylinder can be filled because it has been made in accordance with a code that is devised to insure safety, and then tested to make sure that it does meet the requirements of the code. While it is possible that the unbranded cylinder may have adequate strength, there is no way of being sure about it, because no qualified and licensed inspector has tested and marked it. The law that protects the public takes no chances on the strength of these cylinders—it must be known before they are filled. Further, it is impossible to tell when the unnamed cylinder is filled to the safe limit, since there is no pressure relief valve to prevent it from bursting if it is filled too full and then subjected to a rise in temperature.

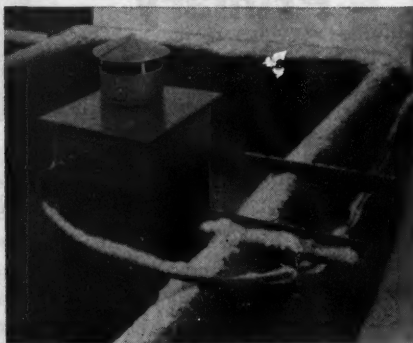
**Problem 4.** Opinions differ on this question. It is generally accepted, however, that the pressure relief valve communicating with the vapor space provides adequate protection, and that the fusible plugs are unnecessary if the pressure relief valve is present. When cylinders get overturned in a wreck, and the gas becomes ignited, there are certain conditions in which the fusible plugs are a hazard. Many of the more experienced operators replace them.

**Problem 5.** As a means of protecting against what might happen in a wreck, every transportation tank should be built with two connections through which it is possible to remove the liquid cargo. If this can not be done, then it is necessary to discharge it, either for use or waste, through the vapor return connection. If the fuel must be wasted, it should be piped to a safe distance from surrounding structures and burned as a torch at a suitable elevation. After emptying and de-pressuring, the tank is still full of fuel vapor, which should be blown out with steam. The steaming should continue until all entrapped fuel is removed from the

## PROFIT 2 WAYS with JOHNSON'S Automatic LP-Gas Stock Tank Heater

**1. Profit from the sale of the**  
• stock tank heater adaptable for any tank—concrete, wood-  
en or steel. The automatic LP-  
Gas heater that means ice-free  
water . . . Johnson.

**2. Profit from an increased**  
• gas load—Johnson's LP-  
Gas Stock Tank Heater averages  
600 lbs. per year. Multiply 600  
by the number of customers you  
can sell and you have a sizable  
gas business.



### YOUR CUSTOMERS PROFIT TOO

It's been proven that warm water increases beef gains and milk production. Cattle take less feed yet maintain steady gains when they have lots of warm water during winter months. A Johnson LP-Gas Heater can pay for itself in one season. It's

easy to install. Stays lit and is completely automatic. It maintains 48° water temperature in the coldest weather. Guaranteed free of condensate problems.

Contact your Johnson salesman or write today.

## JOHNSON GAS APPLIANCE CO.

597 E AVENUE N.W.

CEDAR RAPIDS, IOWA

*Fifty Years of Quality Manufacture of Gas Burning Equipment*

**NOTHING SAFER THAN**

# Tite Seal

**FOR LP-GAS CONNECTIONS**

**THE PERFECT  
SEALING COMPOUND**

**WON'T HARDEN  
OR CRACK**

RADIATOR SPECIALTY COMPANY

**ABSOLUTELY  
LEAKPROOF**

**NO THREAD  
SEIZURE**

CHARLOTTE, NORTH CAROLINA

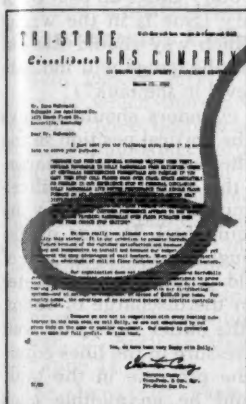


## BUTANE'S HEATING POWER

# Zooms WITH HOLLY

## NarrowWall

Your customers are assured of maximum heat from L. P. G. with a Holly NarrowWall and its patented (#2602441) Secondary Heat Exchanger. You as distributor are assured of satisfied consumers. Tri-State of Kentucky, after two winter's experience, writes:



...really pleased with customer reaction to Holly this winter. It is our intention to promote NarrowWalls hard in the future because of customer satisfaction and because Hollies are so easy and inexpensive to install."



AGA approved under American Standards for Central Heating Gas Appliances.

**HOLLY MANUFACTURING CO.**  
917 S. Arroyo Pkwy., Pasadena 2, Calif.

Without obligation please send me complete facts about Holly NarrowWall designed for L. P. gases.

NAME.....  
ADDRESS.....  
CITY.....ZONE.....STATE.....



1. Holly NarrowWalls with Secondary Heat Exchanger are AGA approved from floor to ceiling. Saves vent material.
2. Holly's patented Secondary Heat Exchanger is AGA approved as integral part of the heater.
3. The extra warm air from SHE outlet is drawn from floor level, meaning better warm air circulation and distribution.
4. Burners are designed especially for L. P. G. gases.
5. Holly NarrowWall's efficiency is not affected by "pull down," thanks to its patented SHE and design.



## PROPANE TRUCK TANKS FOR ALL DELIVERY NEEDS

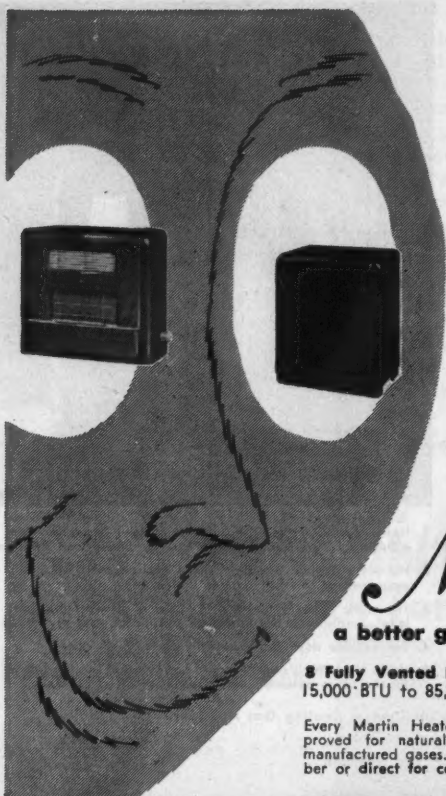
In streamline (illustrated) and walkway types, 1,181 gal. to 1,700 gal. water capacities. Constructed in accordance with A.S.M.E. Code, par. U-69, 200# w.p., or A.S.M.E. Code, 1950 edition, 250# w.p. Mounted on your chassis complete with valves, fittings, pump, hoses. Unit ready for immediate use when picked up. Write for details.

Also 500 gal. and 1,000  
gal. Domestic Tanks  
(Salem System)  
Storage Tanks  
Up to 8,000 gals.



**McNAMAR AND CROWLEY, INC.**  
SALEM 5, ILLINOIS





would you  
like to  
SEE  
more heater  
SALES?

stock the complete

**Martin**  
LINE

a better gas heater for every need

8 Fully Vented Heaters 22 Unvented Heaters  
15,000 BTU to 85,000 BTU 10,000 BTU to 50,000 BTU

Every Martin Heater is AGA Approved for natural, liquefied and manufactured gases. Write your jobber or direct for complete catalog.



Over  
45 years  
stove  
experience

**MARTIN STAMPING & STOVE CO.,** Huntsville, Ala.

**Catch  
that  
Leak**



**Use SHERLOCK**

5-Second Leak Detector  
Used By More Than  
4000 Gas Companies

**CONVENIENT** . . . 4 oz. bottle  
with dauber cap fits hand tool  
kit. No mixing. No waste.

**SAVES MONEY** . . . Reduces  
call-backs. Cuts fire hazards.  
Saves time.

**ALL TEMPERATURES** . . .  
Regular for above freezing.  
Low-Temp for below freezing.

Try It . . . **FREE SAMPLE**

**Winton Products Co.**  
Box 3332, Charlotte, N. C.

(America's largest manufacturer  
of chemical-type leak detectors)

**ONLY RECTORSEAL #2**

offers you  
so much  
for  
so little



In thread compounds,  
Rectorseal #2 leads  
the field in quality.

Just consider these advantages:

Thin in the can, it's easier, more economical to use. Thick in the joint, it holds pressures to 11,350 psi. Insoluble in L.P.G., natural and manufactured gas—all petroleum fractions, and anhydrous ammonia. Never hardens, crumbles, cracks or gets brittle. Holds odors. Ideal for all gas industry thread joints. Conveniently packaged in brush-top cans for easy, economical application.

Prove to yourself, "there's no seal like Rectorseal" in price or quality. Your supply house has it or can get it for you.

Write for free sample  
and additional information.

**RECTORSEAL, Dept. "A"**

2215 Commerce St. Houston 2, Texas

**RECTORSEAL # 2**

MAKING THE L-P GAS INDUSTRY SAFER

scale and other surface deposits on the tank shell, after which the welding may proceed. The tank must be retested, in accordance with the laws of the state, before it is returned to service.

**Questions.**

1. Motor vehicle fuel tanks should only be mounted in the position for which they were originally designed. The gauge and the fixed liquid level indicator will not give correct readings in any other position, and the dip tube for the liquid outlet valve will only reach the low point of the tank in the one position. (Due to an error in the composing room, the illustration of the rotary gauge on page 55 of the February issue is in the wrong position. Which way should the cut be turned so the gauge will indicate the liquid level in the tank?)

2. Filled cylinders should always be kept in the vertical position so the pressure relief valve, which is incorporated in the outlet valve, will always communicate with vapor instead of liquid fuel. In case of discharge through this valve, the loss of liquid would produce much greater hazard than the discharge of vapor.

3. Close the outlet valve and wait while the pressure in the lines equalizes with the pressure in the tank. There should be an audible click when the plunger drops away from the seat. If this is not heard within two or three minutes, it may be possible to jar it loose by striking the tank (never the valve) a sharp blow with a stick of wood or some other blunt instrument which will not damage the tank. After the excess flow valve is open, crack the shut-off valve slightly and wait for a moment for complete equalization of pressures, after which it may be opened as fast as desired.

4. Magnetic valves are generally quite trouble-free, but since there is no way of lubricating the mechanism within the tank, a slight binding may develop, which causes the reading to become jumpy. To be completely safe, the tank equipped with a magnetic gauge should also have a fixed liquid level gauge.

5. This makes it possible to take the temperature at the bottom of the tank without creating a weak spot.

6. All openings used for the transfer of fuel into or out of the tank, and for the equalization or changing of tank pressure to facilitate the movement of fuel, must have some form of double valving. In the service outlet of the domestic tank, if the governing restriction is 1/2-in. diameter or less, a manual valve and regulator are generally accepted as meeting this requirement.



## Mutual Liquid Gas Co. Re-elects Joe Fagan

At the annual meeting of the board of directors of Mutual Liquid Gas Equipment Co., Inc., Inglewood, Calif., on Jan. 15, Joseph Fagan was re-elected president. Wyman Reynolds was elected vice president and G. L. Frazer became secretary of the corporation. Mr. Frazer also will act as general manager of the company.

Warren Souders has been appointed sales manager at Mutual and Leonard Springfield will act as the firm's new field representative.

## Surface Combustion Corp. Offers Service Courses

Eight factory service school sessions, of which there are seven remaining, have been established by Surface Combustion Corp.'s (Toledo, Ohio) Janitrol Div. for 1954. Scheduled to be held at the company's Columbus, Ohio, plant, the sessions will be five days each. A limit of 24 enrollees has been set for each session.

The first class was held Feb. 8, and other classes are scheduled for Mar. 1, Mar. 22, April 12, May 3, May 24 and June 14.

The Janitrol Factory Service School in Columbus is completely equipped with all types of Janitrol equipment for actual observation of the units at work. Company engineers serve as instructors for the courses. Reservations for the school sessions can be made with Janitrol district offices or with C. C. Owen, sales promotion manager in Toledo.

## Robertshaw-Fulton in "Mrs. America" Contest

Robertshaw-Fulton Controls Co. will participate in the 1954 "Mrs. America" contest, it was announced by the company. Participation gives the major controls manufacturer exclusive rights in its field to use the "Mrs. America" name, picture and endorsement for advertising, sales promotion and publicity.

The American Gas Association and Better Living magazine have assumed joint overall sponsorship of the 1954 "Mrs. America" contest. Homemaking ability will be the primary criterion for selecting next year's "Mrs. America." The ability to cook, shop, run her household in a modern way and to keep her husband and children happy will count more than beauty. In past years "Mrs. America" was selected 50 percent on beauty and 50 percent on homemaking.

## Want to give service that sells?



**Do it FAST  
with RCA 2-Way Radio!**

—says C. J. McAllister,  
Vice President  
and General Manager,  
The Parlett Gas Company

"A customer phones in an 'O-G' report, or a request for quick service. Our truck drives up to the door in a surprisingly short time . . . sometimes less than 10 minutes. And when the customer acts enthusiastic about our speedy response, we know we have formed a lasting good impression," reports Mr. McAllister, Vice President and General Manager of one of Maryland's largest LP-gas operations.

"That good impression spreads to neighbors," he continues. "It gives us the best kind of advertising we can get—often leads to new, unsolicited customers. Even our appliance salesmen use 'rapid service' as a point in closing sales.

"Primarily, of course, RCA 2-Way Radio has been a great man-hour and mileage saver," Mr. McAllister adds. "We normally use a pre-scheduled trip-ticket arrangement. About 90% of the time we could not locate drivers for rerouting after they had gotten out into

the rural areas. RCA 2-Way Radio has resulted in far superior utilization of man-power with a substantial cut in the overtime needed to complete a day's work. *We have less backtracking . . . less wear and tear every month.*"

In actual performance, RCA 2-Way Radio proved itself in this installation as it has in many others. Antennas on the roofs of the Parlett offices enable RCA communication equipment to reach vehicles 30 miles away, in every direction. Coverage is excellent over the entire operating area.

**Do It best with RCA 2-way radio**  
Easy to use as your telephone • Compact—takes no more space than a spare tire  
• Tough—stands rough treatment in service  
• Reliable—engineered by world leaders in radio  
• Practical—low-cost operation.

And remember, nationwide facilities are provided by the RCA Service Company. For further details mail the coupon below.

Radio Corporation of America, Communications Equipment  
Dept. C204, Building 15-1, Camden, N. J.

Please send me your free bulletin, "15-Minute Service When You Need It."

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_ ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

☐ Have an RCA Communications Specialist get in touch with me.



**RADIO CORPORATION of AMERICA**

COMMUNICATIONS EQUIPMENT

CAMDEN, N. J.



## Butane-Propane News Increases Office Space

A new two-story addition to its main office building has been completed and occupied by Jenkins Publications Inc., publishers of Butane-Propane News. This gives the company 10,000 sq. ft. of office space in a picturesque, three-level building of modern California design, with frontage on three streets—Alvarado, Miramar, and Mountain View avenue.

On the ground level in the original building are the circulation department and a completely equipped employee's kitchen. The first floor is occupied by the editorial and sales staffs, in the original building, and by the art and production departments in the new addition. Administration offices and research are on the second floor of the new building. Covered garage space for management cars was provided by extending the upper floor of the new structure, on the Mountain View side.

Other Jenkins publications are the monthly magazines Gas and Western Metals; the annual Butane-Propane Catalog; and technical books used internationally in the gas and liquefied petroleum gas industries, including the Handbook Butane-Propane Gases, Butane-Propane Power Manual, and The Bottled Gas Manual.

## El Centro District Wins Petrolane Contest

The El Centro division of Petrolane, Inc., Long Beach, Calif., came through with flying colors to win the Reno-Sparks district appliance sales contest for December. Victory was celebrated by the employees and their wives over a steak dinner, with W. A.



W. A. Coglizer (standing, left), advertising and appliance manager, Petrolane, Inc., congratulates C. V. Shaddy, district manager, for winning district appliance sales contest.



Modern home of "BUTANE-PROPANE News" showing the new two-story addition, which increases the office space of the company to 10,000 sq. ft. and gives frontage on three Los Angeles streets.

Coglizer, advertising and appliance manager, on hand to congratulate C. V. Shaddy, district manager, and his winning team of employees.

Petrolane operates six appliance stores and has found sales contests not only help boost appliance sales volume but develop friendly rivalry between the districts and stimulate a spirit of team play among the employees. The company has also discovered that wives of employees like to "get into the act" by conducting a sales drive of their own at parties and other social gatherings.

## Breidert Co. in New Factory

The G. C. Breidert Co., manufacturers of Breidert Air-X-Hausters, announce the completion of their new factory at 13690 Vaughn St., corner of San Fernando Rd., Pacoima, Calif.

Breidert Air-X-Hauster was the first scientific improvement in the roof ventilating field in over 50 years.

## Eureka Williams Sale Completed

Sale of manufacturing assets of the Eureka Williams Corp., Bloomington, Ill., to the Henney Motor Co. Inc., Freeport, Ill., was completed Dec. 30. The \$4,000,000 sale was approved by Eureka stockholders the preceding week.

C. Russell Feldmann, president of Henney, announced that the Bloomington company would be operated as the Eureka Williams Corp., Div. of the Henney Motor Co. Inc., effective immediately.

B. C. Milner, Jr., was appointed executive assistant to the president of Henney in charge of the Eureka Williams Div. Mr. Milner, former member of a New York management firm, has had wide experience in industrial administration and reorganization. He will make his headquarters in Bloomington.

H. W. Burritt, president of the old Eureka corporation, will continue with the new management on a consulting basis.

## Furniture Business Sold To Expand LPG Operation

Collins & Ryan, Inc., prominent operators of a sizable LPG appliance and furniture business in Millsboro, Del., have recently sold the electrical and furniture division of the firm. The move is designed to permit the company to further expand the LPG end of the business.

Construction of a modern building is scheduled to start in the early spring to house the new LPG operation. Meanwhile the company will share space with the Millsboro Furniture Co., successors to the 42-year-old furniture division of Collins & Ryan.





# **Butane-Propane**

## **POWER SECTION**

**INSTALLATION • CARBURETION • SERVICING**



Twenty-five Ready-Mix trucks at Jackson, Miss., operating on propane have shown a saving of 20% in fuel and maintenance costs.



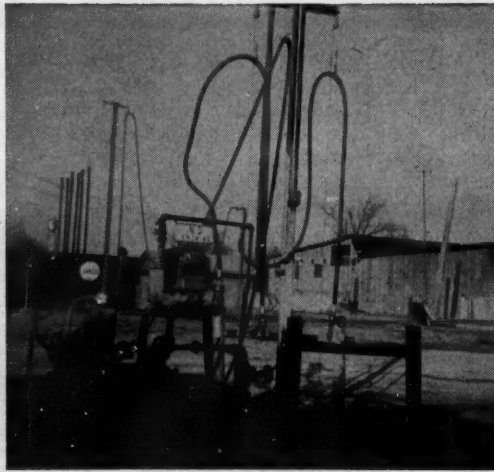
# Ready-Mix Concrete Fleets

## Find LPG the Ideal Fuel

By Carl Abell



**Fuel installation** at Denies' Plant No. 1. Three 6,000 gal. tanks store fuel for truck dispenser. Service stand is well protected; counterweighted hoses never get on ground.



**Tow Motor** fork lift in the cement block plant also operates on propane.

SIXTY-NINE trucks operated by the J. A. Denies Co., Memphis, Tenn., saved their owners \$32,726.31 in fuel cost during 1952, by operating on propane instead of gasoline. That's a lot of money—nearly \$500 per truck. It is typical of reports that we have been getting from ready-mix fleets from various parts of the country. While most operators decline to release their actual operating figures, their generalized statements indicate that the above figures can be approximated almost anywhere that L. P. gas can be supplied without an excessive freight differential.

The Denies fleet consists of 54 ready-mix trucks (each equipped with two engines), 4 dump trucks, 4 flat bed trucks, 2 tractor-trailer units, 2 wreckers, 2 pick-ups, and 1 cement carrier. The entire fleet was converted, beginning with 5 test jobs in August, 1950. Following the suc-

cessful 60-day test on these preliminary units, arrangements were made to convert additional vehicles as they became ready for overhaul. Most of the work was done during the fall and winter months of 1950 and 1951, during the slack season when vehicles could be taken out of service without loss of revenue. The general overhaul and the conversion work were done at the same time at a considerable saving compared with what it would have cost to perform the two operations separately. Conversion of the entire fleet was completed in time to operate all vehicles on LPG for the entire year of 1952.

Carburetion equipment and vehicle fuel tanks were supplied by Century Sales Co., of Memphis. Dean Moss, of that company, also supplied engineering service and supervision of the conversions, which were made by the regular employees of the J. A. Denies Co. shops. Moss also designed

and supervised the installation of the fuel dispensing systems used at the three plants of the operating company. This includes storage, pumping and metering facilities.

The first five vehicles converted included two GMC Series 650 trucks, two IHC K-11 commercial type chassis, and one IHC K-11 army type unit. All of these trucks were equipped with 5 cu. yd. mixers driven by separate engines. The GMC engines were high compressioned by milling the heads .125 in., while the IHC heads were cut .110 in. The auxiliary engines driving the mixers included Ford industrial, Waukesha, and Continental models, which were given appropriate high compression treatment. All manifolds of these engines were cooled, generally by mechanical separation. The cost of the engine work connected with the conversion was approximately \$35 per truck for outside machine work, plus the small



amount of labor performed in the Denies shop.

Standardized fuel tanks of 60 gal. capacity were used on these, as well as on all of the large trucks later converted. Century carburetion equipment has been used throughout the fleet. Labor on the propane installations of the first five jobs, including mounting of fuel tank and separate carburetion equipment for both engines, amounted to 24 man hours per truck. As the result of experience, the installation time on later conversions of the ready-mix jobs was reduced to 16 hours.

These first five converted trucks

closely controlled test conditions to determine the fuel mileage, and to find out what service problems and expenses might be anticipated. To the surprise of everyone concerned, the fuel consumption proved to be less than had previously been experienced with gasoline. This led to an investigation which disclosed that considerable gasoline was being pilfered from truck tanks. Since similar theft of propane was impossible, the LPG jobs were getting credit for a saving greater than that represented by the actual consumption in the trucks. Nevertheless, this was a very real and important saving in operat-

to change engine oil so frequently, it immediately became apparent that savings in oil cost would add further to the benefits derived from the conversion. Costs related to servicing and maintenance of the fuel equipment during the test period were insignificant.

Following the successful completion of the 60-day test, decision was made by Henry A. Pommer, vice president in charge of operation, and Herman Pommer, superintendent of equipment, to proceed with the conversion of the entire fleet.

These trucks are operated out of three plants, all in Memphis. Fuel



Henry Pommer, V. P. i/c Operations, who authorized the conversion, and likes the results.



Typical J. A. Denie's Sons Ready-Mix truck with both engines running on propane.



The company's long-distance road tractor refuels at a service station enroute to the job.

were operated for 60 days under was provided for all three plants, the engineering and installation being done by Dean Moss. Plant No. 1, which is the center of operations, has three 6000-gal. tanks, and the necessary dispensing and metering equipment. The fueling set-up at plant 2 includes two 6500-gal. tanks, while the five or six trucks operated out of plant 3 are fueled direct from a 1000-gal. tank mounted on a four-wheel trailer. This is filled at plant 2, and towed over to plant 3 by a truck that comes to plant 2 regularly to take cement over to plant 3. Thus the necessity for a permanent storage tank at plant 3 is avoided, and the fuel supplier, Delta Fuel Co., operating from West Memphis, Ark., has the benefit of reduced delivery mileage.

The permanent storage set-ups are equipped with 20 gpm pumps and Neptune direct reading meters. More

ing cost. Since it was not necessary than 70 carloads of fuel have been pumped through these meters, at a total maintenance cost of less than \$15. Hoses are suspended and counterweighted so they are automatically elevated when not in use. They have never had any trouble from dirt in the nozzles, and since neither the hoses nor the nozzles ever drag on the ground or get under the wheels of the vehicles, there have been no replacements required in the more than two years that they have been in service. Total cost of the fuel storage and dispensing equipment for the three plants was \$17,650.

Cost of the equipment purchased for the truck conversions came to \$311.50 for each of the trucks equipped with two engines. It included the 60-gal. tank, separate converters, carburetors, filters, and electric fuel locks for each engine, and the necessary hoses, tubing, and fittings. Parts

storage and dispensing equipment for converting the single engine jobs totalled \$286.50. Total equipment investment in the fleet conversion was \$20,406, to which must be added the cost of labor as noted above, and approximately \$35 per vehicle for engine changes.

operation in 1952 consisted of 303,017 gal., and the laid-in price, including federal tax, was \$28,786.62. Fuel used

Propane purchased for this fleet to run the mixer engines is not subject to state tax, so special arrangements were made with the state tax authorities to exempt 40% of the fuel consumed by the mixer trucks from the state levy. Full state tax was paid on all propane burned in the remaining vehicles. With the state tax, the propane cost \$41,513.33. The same amount of gasoline, under the same arrangement, would have cost \$74,239.84, leaving a saving in fuel cost of \$32,726.51.



Other savings are not yet determinable, as it will be a long time before any of the engines come up to the next overhaul period. Ready-mix trucks do not run very high annual mileages, 25,000 miles being exceptional, and 20,000 being close to the average in this fleet. The other trucks also operate limited mileages. There are, however, certain items of saving which are unmistakable. All service work on the carburetors, converters, and other propane fuel units was performed by Century Sales Co., and the entire billings for 1952 added up to \$272.41. The cost of maintaining the gasoline carburetors for the fleet when that fuel was used ran

The Denies company officials are sure that the entire cost of conversion, plus depreciation on the storage and dispensing equipment, has been saved during the first year following completion of the fleet conversion. They point out that it will be at least five years before they are able to determine the reduction in engine maintenance costs, but the savings proved to date in cost of fuel, oil, and carburetor maintenance make a very substantial addition to the annual operating profit. They could not afford to return to operation on gasoline.

Down in Jackson, Miss., three trucks operated by Jackson Ready-Mix Co. were converted for a similar

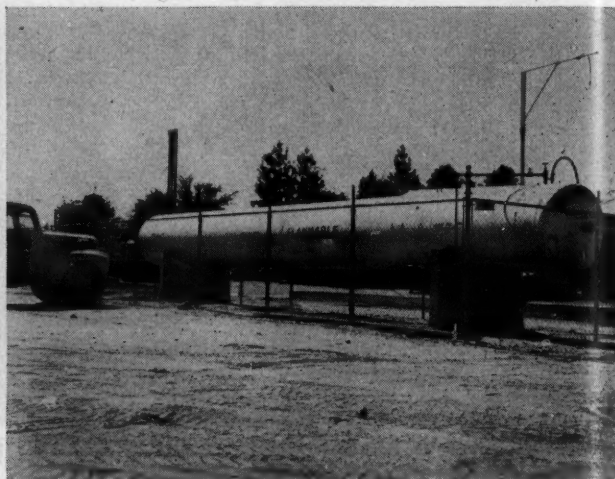
carburetor maintenance costs, longer spark plug life, and less expense in maintaining the electrical systems.

Oil experience has not yet been determined for normal operation. Sorrel states that the break-in time on new and rebored engines is much longer than with gasoline, and that during that period, oil consumption is high. This break-in period has continued as much as 20,000 miles with certain engines, although 10,000 miles is closer to the average. After break-in is complete, oil consumption drops to a very low figure, and remains low for a long time.

Before making the conversions, the shop mechanics' time was fairly



**Latest addition** to the Jackson Ready-Mix fleet—a factory equipped International.



**Storage tank** at Jackson Ready-Mix plant. Dispenser is on main driveway opposite shop.

close to \$270 per month—a saving of approximately \$3000 per year in carburetor maintenance alone.

While no attempt has been made to evaluate the saving in time required to service the trucks, Herman Pommer points out that with the 60-gal. tanks, refueling is necessary only every other day, whereas with the smaller tanks formerly used with gasoline, it was necessary to fill every other day, and on a heavy day's run, two refills were necessary. With the 20 gpm pumps, the entire fueling operation requires less than five minutes, which is less time than was required to fill the gasoline tank with the slow-speed service station type pumps formerly used. While the saving of servicing time on one vehicle is not important, it really adds up when 69 trucks must be serviced.

test in July, 1951. This test was continued for a full year before the rest of the 25 vehicles in the fleet were converted. The records showed that these trucks were consuming 10% more propane than similar jobs operating on gasoline, but the total cost of fuel was considerably less on account of the lower per gallon price.

All engines in the fleet were either new or newly rebuilt at the time of conversion, and since these vehicles also operate an average of about 20,000 miles per year, it is much too soon to attempt to estimate the comparative engine life. According to Joe C. Sorrel, service manager of the fleet, there has been noticeable reduction in the number of road failures, while fuel pump failures, which were formerly troublesome, have been eliminated, and the records show lower

evenly divided between engine work and maintenance of other parts of the vehicles. At present less than 10% of the shop time goes into work on the engines and engine accessories.

Fuel tanks on the Ready-Mix units of this fleet are of 40-gal. capacity, two per truck. The few other trucks in the fleet have single tank installations, sized according to the needs of the trucks. All carburetion equipment is Ensign; sold and installed by Moulden Supply Co., of Jackson, in whose shop the conversions were made.

Fuel for the vehicles, supplied by Sandifer Butane Co., of Jackson, is dispensed through a 6000-gal. tank in the yard of the ready-mix plant, by means of a 10 gpm Corken pump.

During the past year 10 new IHC



190 trucks have been added to the fleet. These came from the factory equipped for L. P. gas. The company program calls for replacement of five old trucks per year with similar units equipped for butane.

While the full extent of the saving is not yet apparent, Brock Day, owner of the company, states that their records show that the change to L. P. gas has given them a reduction of at least 20% in vehicle operating cost.

## J. & S. Carburetor Co. Celebrates 20th Anniversary



S. P. Jones

Founded in March of 1934 by S. P. Jones and E. W. Schadek, the J. & S. Carburetor Co., Dallas, Texas, celebrates its 20th anniversary this month.

Starting with a natural gas carburetor invented by Mr. Jones when the company was originally formed, the firm has pioneered in the development and manufacture of LPG vaporizers, regulators and carburetors. During the 20 years of its history the concern expanded from a small factory to five buildings and established a trademark that is nationally known.

J. & S. built its reputation with tractor conversion kits, and recently entered the truck and passenger car field with specially engineered kits. According to S. P. Jones, president and manager, J. & S. kits have saved the farmers of America millions of dollars in fuel and motor oil costs.

## Chicago Replaces Another Route With Propane Buses

The Chicago Transit Authority announces the replacement of 90 old red street cars with 99 new propane buses on the Ashland Ave. route, effective Feb. 15. Two special bus services, between 95th and Ashland and the Downtown Loop, and an experimental service from inside the Union Stockyards to 95th and Ashland, are operating in connection with the main bus route.

Substitution of buses has permitted changing the old routing to eliminate four left hand turns which slowed down the street car schedule, thus materially improving service.

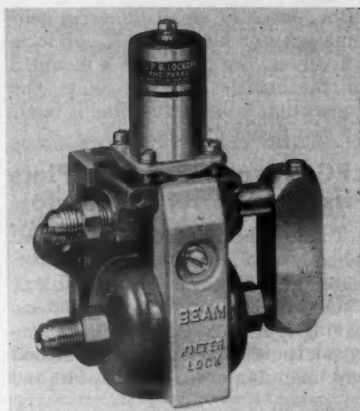
In making the announcement of this substitution, the CTA officials

emphasize the odorless nature of the exhaust, which is a factor of increasing importance in maintaining favorable public relations.

## Combined Fuel Lock and Filter Added to Beam Line

A combination fuel lock and filter assembly, built into a single easily mounted unit, has been announced by The Parkdale Co., manufacturers of Beam LPG carburetion equipment. Both the filter and lock-off units are approved by Underwriters Laboratories.

Stock units are available with



# CENTURY

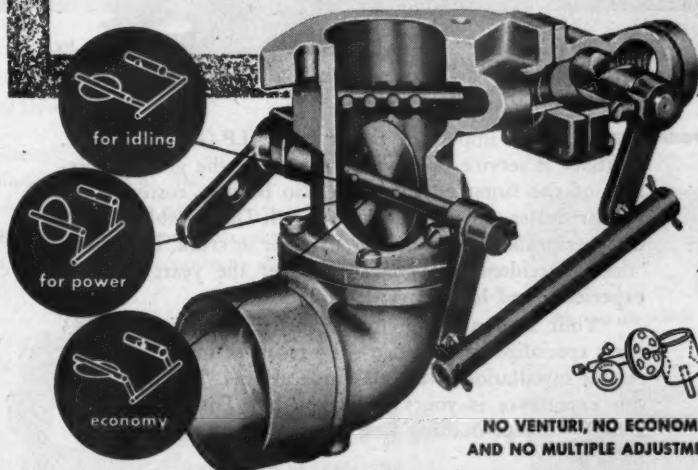
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# CENTURY



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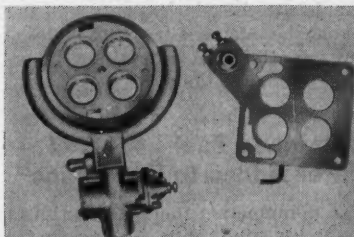
## LP-GAS CARBURETION



either large or small filters in combination with both 6 and 12 volt lock-off valves. The assembly is mounted on the vehicle with two bolts, and connection into the fuel line is made by two flared fittings.

### LPG Adapter and Idle Plate Fits Four Barrel Carburetors

To meet the demand for equipment which would permit L. P. gas conversions on 1952 and 1953 Cadillacs, Packards, Oldsmobiles and Buicks, having four barrel carburetors, American Liquid Gas Corp. has designed and manufactured an adapter and



idle plate which will accommodate these carburetors to permit the conversion to LPG.

Most passenger car conversions are made on the combination system and the new equipment for the four bar-

rel carburetors enable the car owner to use his own carburetor and convert his automobile to run either on gasoline or LPG, simply by throwing a control switch.

### Carbon Monoxide Studies Show Propane Advantages

The relation of carbon monoxide (CO) fumes to the "smog" problem is under study in a number of cities. While the complete relationship to the irritants present in smog is difficult to trace, the harmful direct effects of carbon monoxide on human health have long been understood.

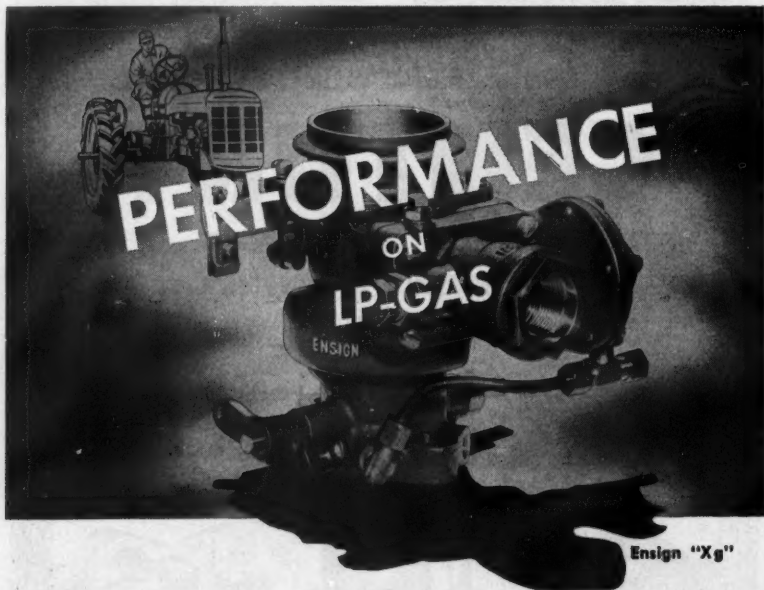
Studies have shown that carbon monoxide is present in the exhaust gases of all gasoline engines. Samples collected in Los Angeles showed the ordinary range to be from 5.3% to 13.72%, with an average of approximately 7%. It is generally recognized that the carbon monoxide production of propane-burning engines is significantly less than that of gasoline engines.

A recent test conducted by Truesdail Laboratories, Inc., Los Angeles, Calif., for Dix Manufacturing Co., manufacturers of Dix carburetion equipment, using a Willys Jeepster with dual-carburetion equipment, showed the lowest carbon monoxide content in three tests on gasoline to be 5.3%, while the highest result after switching to propane proved to be 2.1%. Another recent exhaust gas analysis, on a propane powered city service bus, showed a CO concentration of only 3.1%.

Analyses of atmosphere at street level in downtown Los Angeles on particularly smoggy days have shown CO content as high as 42 parts per million parts of air. It is considered by medical authorities that 100 parts per million are sufficient to incapacitate the average individual after continuous exposure for one hour. The preliminary symptoms include sleepiness, premature fatigue, and mild headaches.

Carbon monoxide poisoning is cumulative—that is, the effect of continuous mild exposure may not be dissipated by the human system as fast as the new effects accumulate. This is of importance in connection with the health and working efficiency of people who must spend their time on congested city streets, or in factories and warehouses in which gasoline-driven equipment such as fork-lifts and sweepers are operated throughout the day. Increasing attention is being paid to this factor on human health and efficiency.

The substitution of propane for gasoline power in city service buses



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and in indoor vehicles is being given increased attention by health authorities. It is significant to note in this connection that factories and warehouses now using propane instead of gasoline for indoor mobile power applications report noticeable improvements in both atmospheric condition and employee morale.

## Safety Council Considers LPG Service Stations

At the recent annual meeting of the National Safety Council a panel discussion was held to cover the problems of safety in relation to the growing number of service stations handling and dispensing butane and propane for motor vehicle fuel. Panel chairman was Alexis de Tarnowsky, Safety Engineer, Pure Oil Co. Participating in the panel discussion were Walter Miller, President, Dri-Gas Corp., I. F. Statz, Wisconsin Industrial Commission, and Paul W. Tucker, Phillips Petroleum Co.

Recognizing that more facilities for fueling LPG equipped vehicles must be provided, the problems before the panel were: Where should these filling stations be located? Can the fueling of L. P. gas engines be accomplished safely at the same location at which gasoline engines are fueled? Can bulk storage for L. P. gas be safely located on the same premises with the bulk storage of gasoline and other petroleum products? If not, how close can one be located to the other? Is one operation more hazardous than the other? Do the two operations constitute hazards to each other?

The following conclusions were prepared for publication in the National Safety Council Transactions:

From the opening statements of the panel members and the questions and answers that followed, it can be said that from safety considerations L. P. gas fueling facilities can be located at service stations provided they are properly installed. L. P. gas bottles and cylinders should not be filled at a service station unless facilities have been properly designed for such filling operations. This involves proper layout and installation of approved equipment to do the specific job.

Gasoline dispensing pumps should not be converted to L. P. gas service since they are not constructed to handle the pressure under which L. P. gas is handled. L. P. gas storage tanks at service stations should be properly protected to prevent the accumulation of spilled gasoline and other petroleum products underneath the L. P. gas storage tanks.

Excess flow valves should be installed in the piping between the

L. P. gas storage tank and the dispensing pump so that in case of contact by a motor vehicle or by any other means the L. P. gas dispensing pump is broken or torn from its connections the excess flow valve will prevent major release of gas.

While the maintenance of an L. P. gas bottle exchange is safe at a service station customers should be repeatedly cautioned regarding the safe handling of these LPG bottles. At the bulk plant L. P. gas can be safely stored provided it complies with the space and distance requirements specified in NFPA Pamphlet No. 58.

Special provisions should be made to prevent the flow of gasoline and other liquid petroleum products underneath the LPG storage tanks in case of rupture or leakage of the gasoline or other liquid fuel tanks.

## First LPG Station Opens at Bristow

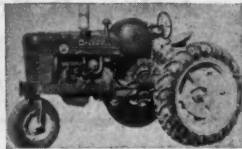
Bristow Butane Co., leased by Elmer Holmes, is the first LPG business to operate at Bristow, Okla. Located at Kelly lake, west of the city, the station offers full service and supply on LPG.



Oliver 88



John Deere A



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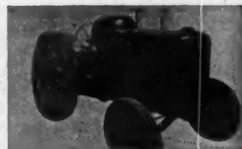
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# Lone Star Drivers and Truck Make Several Records

**D**RIVING a heavy duty transport truck 255,000 miles without engine repairs is about 150,000 miles farther than the White Motor Company considers standard performance in that kind of service. This is the record turned in by a Lone Star Gas Co. LPG transport in the hands

of their drivers, George Reynolds and Dewey Elam. George and Dewey do not claim all the credit, however. The engine ran on butane and propane, which they admit made some difference.

George and Dewey have been a Stargas transport driving team for



George Reynolds (left) and Dewey Elam drive for Lone Star and are LPG boosters.

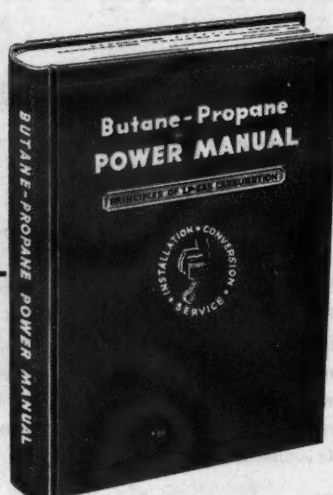
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- |  |   |
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| 11. Raising the Compression Ratio                  | 23. Selling L. P. Gas Carburetion                                   |
| 12. Cooling the Intake Manifold                    | Appendix (including Definitions)                                    |

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the past seven years. They don't make the same trips at the same time, but they drive the same transport on alternate ends of the week for a whopping 8,000 miles a month.

Recently the big five-ton White they have been driving since it was purchased on January 24, 1951, passed the quarter million mile mark with the outstanding record of no engine repairs and an average operating cost of less than four cents a mile.

It's the second truck on which these men have turned in a record of this kind. Prior to present transport No. 2167, they drove a White transport 263,000 miles before the engine was overhauled.

How and what do they do? Arthur Deffebach, foreman of the central garage at Ranger, puts it this way:

"Both are conservative drivers and take particular pride in the equipment they operate. They handle that truck like a baby. When anything goes wrong, they catch it as soon as it happens and take immediate steps to have the trouble corrected. Naturally they get better service out of their equipment as a result.

"Because of their good, conservative driving they do a good job of hauling, too, and stay on the road without breakdowns. We do all of the maintenance work on the truck but we don't take the credit for the good record. It's that personal care, handling the truck as though it was their own investment, that counts. Correcting small troubles before they develop into big repair jobs, is an important factor in this truck record."

In Dallas where both men live, other factors point to the teamwork these drivers have developed. Both men are friendly and each is thoughtful of the other.

For example, neither leaves the



truck for the other to step into with a flat tire or a minor repair needed. When George ends his run and parks the big transport in the Logan street yard on Wednesday night, he checks it over and then calls Dewey. And that telephone conversation is mostly about the truck and how it is behaving. Dewey does the same thing for George when he comes in on Saturday night.

Highest repair bill on the truck was in January 1953 when carburetor repairs and timing and routine repairs came to \$134. The truck was then two years old and had 177,928 miles on it. Tires are the biggest expense, but even there, periodic rotation and careful driving have cut expense to a minimum.

Neither driver has had an accident in the nine years they have been with the company and they started the same day, in November 1944. They didn't team up on the same truck, however, until two years later.

### Suburban Propane Gas Adopts Helicopter For Short "District" Hops

THE helicopter is making inroads into the transportation field. This mode of travel has been adopted by the Suburban Propane Gas Corp., Whippany, N. J., for making short hops between its 78 district offices and plants which are located from 50 to 100 miles apart, in 16 eastern states.

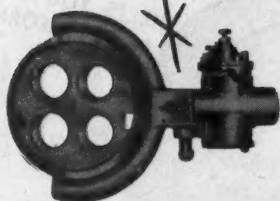
In explaining the company's decision to purchase a helicopter, Mark Anton, president, said, "We believe that it will save us both time and money. With a helicopter, our executives will be able to visit our district offices more frequently than has been possible to date."

Mr. Anton further stated that when a long trip is anticipated the helicopter is ideal for taking personnel to any one of the three major airports in the congested metropolitan New York area, and that it also will be used for transportation to New York City if such travel is necessary during the commuter rush hours of highway traffic. Another time-saving feature is the fact that in most areas the helicopter can deposit its passengers "at the door" of its destination.

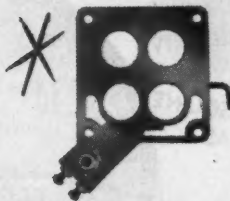
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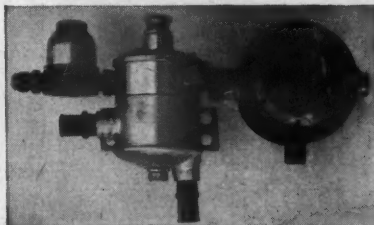
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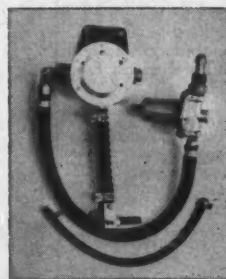
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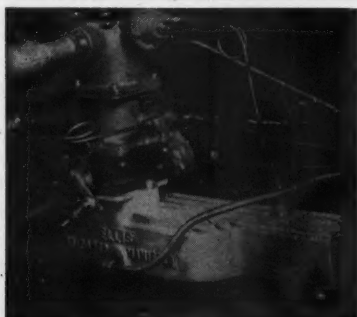
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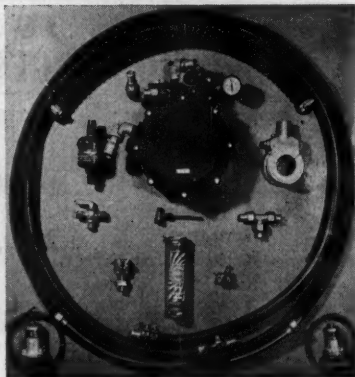
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LPG Carburetion Division

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bottled gas for uses in the home, on the farm, and in industry, Suburban has set up marine dealers from Maine to Florida to provide a coastwise, uniform gas service for pleasure and commercial craft cruising along the Atlantic coast and on the inland waterways.

Through a subsidiary company, the corporation supplies farmers with the new 82% nitrogen fertilizer, anhydrous ammonia, under the trade name, "Suburban Hi-N."

Joseph Strollo, pilot of the helicopter, has been flying aircraft since 1931. He recently returned to the states from a two-months' assignment in Alaska with the Army Engineers, who were on a surveying mission. Prior to that time, he was in Egypt on a Government assignment with the T.C.A. Point 4 program. His function was to train Egyptians to fly helicopters and also teach them crop dusting, the object being to dust cotton against the boll weevil, locust and other insects.

The helicopter is now housed at the Morristown Airport, but future plans include a heliport at Whippany.

## LPG Lighter Used By 2 1/2 Million Smokers

"No wick, no flint, no fluid." These are the words, first heard in France in 1947, which ushered in a new type of pocket lighter called the "Flaminaire" which uses LPG. Some 2,500,000 of the LPG lighters are now in use throughout the world.

"Flaminaire" was born in the mind of Marcel Quercia, owner of a sizeable business which has been one of France's leading producers of liquid-fuel lighters and other smoking accessories. Quercia was one of the first in his field in France to introduce assembly-line production techniques and to develop a systematic chain of retail outlets.

The "Flaminaire" has four basic elements: the chamber which holds the gas in liquid form, called "butabloc"; the release valve, a delicate mechanism adjusted to give a flame slightly over a half-inch in height; the lighting mechanism, similar in some respects to that of an ordinary lighter, but requiring a much smaller spark; and the case.

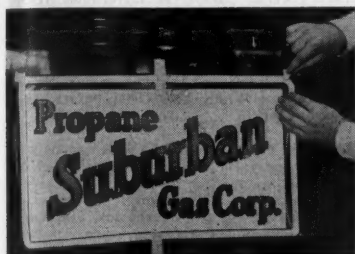
Three advantages are claimed for the "Flaminaire": it can operate for a long time without a refill (being guaranteed for 10,000 lights); it works with little pressure from the finger; and its flame leaves no odor or residue.



## Suburban Propane Adopts Scotchcal for Emblems

Mark Anton, president of Suburban Propane Gas Corp. of Whippany, N. J., said recently that for durability and ease of application, Scotchcal brand film has been adopted as standard material for emblems on all trucks operated by their company.

"We selected Scotchcal because it can be applied more cheaply and lasts longer than paint," said Mr. Anton. "There's no mess or delay resulting from application. Our trucks operate the same day the emblems are put on." It was also cited that simplicity of application is one of the major advantages of the material, which is manufactured by Minnesota Mining and Manufacturing Co., St. Paul, Minn.



The smooth-surface film can be applied directly to any surface that will not rust or deteriorate in weather such as glass, aluminum, galvanized iron, stainless steel and on most well painted areas. The message on the emblem is silk screened with red letters outlined in black against a yellow background, and local sign shops can make up emblems from the material, it was announced.

## Signal Oil & Gas Co. Near Completion of Plant

Signal Oil and Gas Co. is nearing completion of its natural gasoline and sulphur extraction plant near Tioga, N. D.

The plant will have an initial operating capacity of 60 million cu. ft. of gas daily to be gathered from the Tioga area, and will process natural gasoline and LPG.

## Suburban Gas Co. Acquires Western Liquid

Western Liquid Gas Co., Adelanta, Calif., formerly owned by Ross Parsons, was acquired recently by the Suburban Gas Co., Upland.

The Suburban Gas Co., one of the largest LPG dealers, operates in Southern California and Arizona with 24 branches.

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## HELP WANTED

### HELP WANTED?

A COMPANY SEEKING A BRANCH MANAGER AND a salesman got 38 replies from one ad in the classified columns of BUTANE-PROPANE News... THE PLACE TO ADVERTISE FOR WHAT YOU WANT.

SEVERAL DESIRABLE TERRITORIES available for full time Sales Engineers to sell line of L. P. valves, regulators, accessories. Write Box 210, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

WANTED — EXPERIENCED SALES representatives. We have openings for aggressive sales representatives with experience in sale of L. P. gas and anhydrous ammonia systems. Openings in Eastern, Middle West and West Coast areas. State experience and full information in application to: General Manager of Sales, The J. B. Beird Co., Inc., P. O. Box 1115, Shreveport, Louisiana.

#### FLORIDA MANAGER WANTED

Operating manager with executive ability for successful L. P. gas business in Florida. All bulk deliveries servicing approximately 1,500 customers, excellent equipment, outstanding showroom in growing, substantial community. Fine living conditions. Please give complete details of experience and indicate salary requirements. All replies in confidence. Write Box 330, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

OPPORTUNITY FOR ENGINEER-draftsman with experience in designing and engineering of L. P. gas and anhydrous ammonia tanks. State experience and background in application to Dallas Tank Company, Inc., P. O. Box 5387, Dallas, Texas.

MAJOR OIL COMPANY WANTS LPG salesmen for Midwest, Oklahoma, Texas. Prefer college grads with some sales experience. Give complete data including photo and salary. Write Box 310, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

## SITUATIONS WANTED

20 YEARS EXPERIENCE IN ALL PHASES of L. P. gas operations, including bulk plant construction, propane-air installations, available as manager. Write Box 325, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

FORMER OWNER AND OPERATOR OF L. P. gas company, presently connected as branch manager large distributor seeks management opportunity with full responsibility. Young, energetic and fully experienced in all phases of merchandising and distribution. Resident of Florida, will relocate as necessary. Please reply to Box 315, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

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FOR SALE — BUTANE AND PROPANE gas business located in North-Central Florida. Now doing 500,000 gallons, can easily be increased to million gallons yearly. Must be able to pay \$50,000.00 down. Write Box 220, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

BUTANE-PROPANE DISTRIBUTORSHIP and Standard Oil jobber for sale. Each is separate corporation and will sell 50% of the stock in both corporations to the same individual. The butane-propane corporation selling over 2,000,000 gallons yearly and the fuel and oil setup selling 900,000 to 1,000,000 gallons yearly. Ten pieces of rolling stock all in first class condition and adequate storage in both operations. Both of these operations are specializing in oil field service and the expansion possibilities are unlimited. With the present volume, should pay out in three years. Terms: \$65,000.00, \$35,000.00 cash and five years on the balance at 5% interest. Write Box 320, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

FOR SALE: LPG BUSINESS IN NORTH Mississippi. Tractor and bottle business making a balanced load about 1000 customers. Sold 600,000 gallons last year. Have 100,000 gal. storage, can receive gas by rail or transport. Rent on store low, and all good equipment. Have summer line that ties in with gas business, so can keep experienced labor all year. Business can be bought with small cash payment. Will pay for itself in 3 years. Have other interests. Write: H. J. Sylvester, 1994 Brooks, Memphis, Tenn.

FOR SALE—FAST GROWING L. P. GAS and appliance business. Rich farming and ranching area, central Nebraska. Bulk storage, bottle filling plant, 1952 2-ton truck with 1500 gal. tank. Two 1949 pickups, excellent condition. Doing 300,000 gal. per year. New modern home and store building. Owner in poor health. Complete with stock and equipment: \$35,000.00. Write Box 35, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

## FOR SALE — TRUCKS AND TRAILERS

USED PROPANE DELIVERY TRUCK FOR sale. L-160 International, 2-ton, with Model 100, 1400 gal. twin tanks, mechanical seal pump, Ensign propane carburetion, hose, piped complete. This unit was placed in service new 15 months ago and is in good condition with approximately 19,000 miles. Easy terms. \$3,195.00 plus meter cost if one is wanted. White River Distributors, Inc., Batesville, Ark.

## FOR SALE—TRUCKS-TRAILERS - Cont.

1½-TON INTERNATIONAL WITH 29,000 miles in good condition with NEW 900 gal. single propane tank, skirted, no plumbing. \$1,750.00. Can pipe to your specifications with new pump, etc., for slight additional charge. Terms. White River Distributors, Inc., Batesville, Ark.

READY TO GO. BRAND NEW, 1954 1-TON Chev., big motor, 700 x 18, 8-ply duals on rear, with new 600 gal. single propane tank mounted on truck. Easy terms. This is ideal for cylinder filling or spare truck. \$2,645.00. We can pipe to your specifications in one day at our regular piping prices. White River Distributors, Inc., Batesville, Ark.

NEW: IMMEDIATE DELIVERY, 1400 WG U69 propane extra lightweight twin barrel delivery unit. Mounted on new 1954 2-ton, 2-speed Chevrolet truck with big engine. Fill and vapor hose assemblies—Viking Mechanical Seal Pump —Power take-off assembly and motor fuel tank. READY TO GO FOR \$3970.00 tax paid. Also available at low extra cost: meters, fire extinguisher and L. P. carburetion. American Tank & Manufacturing Co., 2136 West Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Riverside 9183.

NEED A WORKHORSE? WE HAVE NEW 1953 Model 353 GMCs; 2 ton, 2 speed, w/8.25 tires equipped with a 1400 WG Nor-Tex Standard Twin Propane unit. It's skirted, plumbed and perfectly balanced! Complete with recessed fuel tank, Viking KK190 pump with mechanical seal, 50' filler hose, ICC lights and power take-off with spline jack shaft. Finish is aluminum paint over red oxide. Tax paid and ready to go. \$4043.80 FOB North Texas Tank Co., Box 519, Phone Central 5416, Denton, Texas.

A PACKAGE UNIT SPECIAL! A NEW 1953 2 ton, 2 speed Chevrolet equipped with a 1250 WG Nor-Tex Standard Twin Propane Unit. It's skirted, plumbed and perfectly balanced! Complete with recessed fuel tank, Viking KK190 pump with mechanical seal, 50' filler hose, ICC lights and power take-off with spline jack shaft. Finish is aluminum paint over red oxide. Tax paid and ready to go \$3919.85 FOB North Texas Tank Co., Box 519, Phone Central 5416, Denton, Texas.

SPECIAL: AMERICAN "BETTER-BILT" extra lightweight 1500 water gallon U69 propane twin barrel delivery unit, with Viking Mechanical Seal Pump—Neptune Print-O-Meter—fill and vapor hose assembly—mounted on new 1954 2-ton, 2-speed GMC chassis with 8.25 tires —READY FOR SERVICE. PRICED AT \$4475.00 tax paid FOB Dallas. Other sizes available at comparable low cost. American Tank & Manufacturing Co., 2136 W. Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Riverside 9183.

COMPARE OUR PRICES — A NEW 1400 W. G. twin Model 100 propane tank with Viking KK-190 pump, PTO, plumbing, ICC lights, filler hose, white enamel, Neptune #433 Print-O-Meter; excise tax paid, mounted on NEW 1954 6400 2-ton, 2-speed Chevrolet or Ford: \$4,230.00. Easy terms. WHITE RIVER DISTRIBUTORS, INC., Batesville, Ark.



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### FOR SALE—TRUCKS-TRAILERS - Cont.

**IN A HURRY FOR A PROPANE TRUCK?**  
Immediate to 3-day delivery on any model NEW unit, 600 to 2,000 gallon. Any type pump, meter, propane carburetion, etc., that you desire. All units are tested for leaks by pumping gas through them before they leave our shop. **SEVERAL USED UNITS** also available. 25% down, balance in 18 payments with 5% interest financed through our local bank. **CALL US DAY OR NIGHT ANY DAY.** Preston W. Grace, White River Distributors, Inc., Phones 570 or 686, Batesville, Ark.

**PERFECTION PLUS! A NEW 1400 WG** twin Trinity model #103 propane unit with double door rear compartment, housing Neptune #433 Print-O-Meter and remote control Okadee valves; excise tax paid, KK190 Viking pump, PTO&DS, plumbing, ICC and directional lights, fuel tank, filler hose, white enamel, mounted on 1953 2-ton 2-speed F-600 Ford or #6400 Chevrolet chassis. \$4550.00 FOB Trinity Steel Co., Inc., 3301 S. Lamar, Hunter 8321, Dallas, Texas.

**A DELUXE TRINITY TWIN UNIT MOD-** 103, complete with KK-190 Viking pump, remote control Okadee valves, Neptune Print-O-Meter, 54 gal. fuel tank in rear compartment, 50 ft. filler hose, white enamel and tax paid, mounted on new 1953 RP-160 factory LPG equipped International chassis, ready to go at \$4,988.00, F.O.B. Trinity Steel Company, Inc., 3301 S. Lamar St., Dallas, Texas. Phone Hunter 8321.

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**WE HAVE FOR SALE 4000 GAL. PRO-** pane 2 bbl. transport trailer. 1947 model by Dal-Worth Tank Co., Grand Prairie, Tex. Excellent condition. Waldron Butane Service Co., Waldron, Ark.

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**NATIONAL CARBURETION COMPANY**  
P. O. Box 3075, Phone 315, Shawnee, Okla.  
All orders C.O.D.

## Classified

### FOR SALE—TANKS-CYLINDERS - Cont.

**ONE—8-ft. DIAMETER x 40-ft. LONG BU-** tane tank ASME, 125 psi. Loeb Equipment Supply Co., 1923 West North Ave., Chicago 22, Ill.

**FOR SALE: BUTANE CYLINDERS, 60** lb. capacity, ICC, with valves, used. \$5.00 each. FOB Cleveland, Ohio. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland 15, Ohio.

**FOR SALE: PROPANE TRACTOR TANKS** for Farmall M & H; John Deere A & B. Price: \$40.00. FOB Mitchell, South Dakota, Glo Bottle Gas & Appliance Co.

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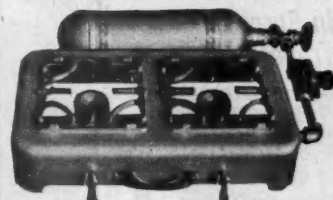
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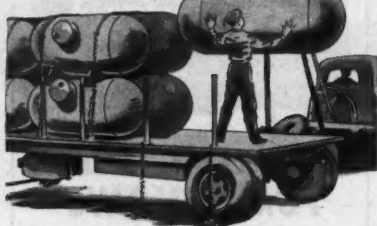
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